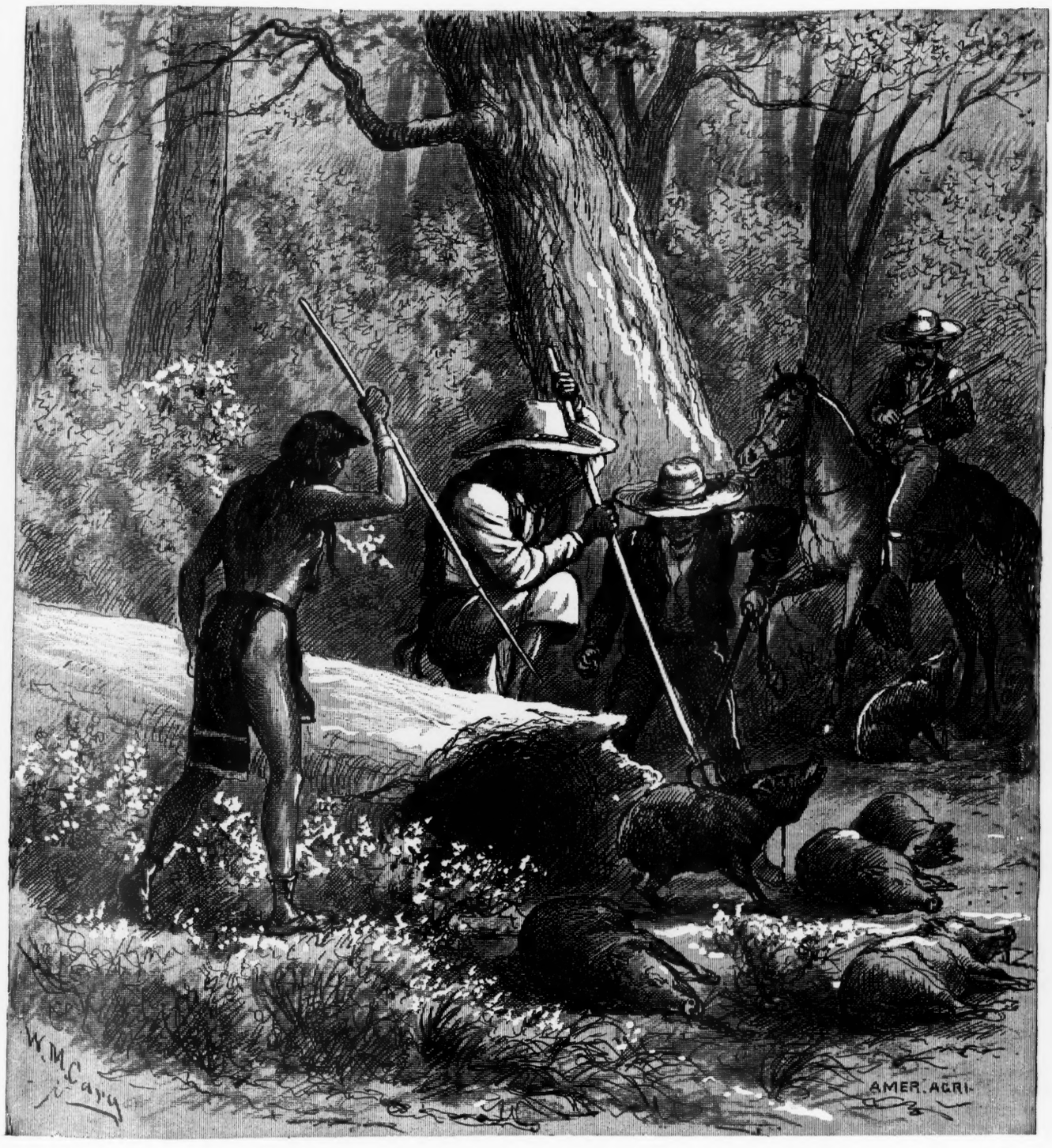
AMERICAN AGRICULTURIST

FOR THE

FARM · GARDEN · & · HOUSEHOLD

"AGRICULTURE IS THE MOST HEALTHFUL, MOST USEFUL, AND MOST NOBLE EMPLOYMENT OF MAN."—WASHINGTON.

VOLUME XLVII.—No. 9. NEW YORK, SEPTEMBER, 1888. NEW SERIES—No. 500.



HUNTING THE COLLARED PECCARY (See Page 374).

COPYRIGHT, 1888, BY THE ORANGE JUDD CO.

ENTERED AT THE POST OFFICE AT NEW YORK, N. Y., AS SECOND CLASS MATTER.

September.

Harvest shall spread with its glittering wheat,
The barn shall be opened, the stack shall be piled;
Ye shall see the ripe grain shining out from the wain,
And the berry-stained arms of the gleaner's child.
Heap on, heap on, till the wagon ribs crack!
Let the sheaves go towering toward the sky;
Up with the shock till the broad wheels rock,
Fear not to carry the rich freight high!

—ELIZA COOK.

FARM ÷ AND ÷ GARDEN ÷ WORK
SEPTEMBER, 1888.

Take a vacation. It may appear contradictory to begin notes upon work by advising a vacation, which many regard as implying a surcease of work. In every well planned system of farming, a vacation, usually to be taken this month, should be provided for. A change in the kind of work may be as beneficial, in the way of recreation, as where "one makes a business of pleasure." This is the month for usually holding fairs, and the fairs, preferably the local or county fair, and the State or district fair, if held within reach, should be visited. The farmer who goes to the fair merely as a spectator, fails of his whole duty to the fair. He should exhibit whatever he has that will interest others. Weeks before the date of the fair, decide what to exhibit, and get it into a condition to show. If farm animals of any kind are to be shown, do not bring them to such a condition of fatness by overfeeding that they will be spoiled for honest farm use for the rest of the season. So with crops. If one is in doubt whether he shall try ruta-bagas or mangels next year, it will not help his decision if he sees a bushel of roots selected from the produce of a five or ten acre field. Let him show good honest farm produce, such as every farmer can grow if he tries, and not those things which have been raised by expending more upon feeds and fertilizers than the animals or crops would bring if sold on the fair ground. If those overpampered specimens are shown, it should be as an example and a warning, and not as worthy of imitating.... One of the great needs of our agriculture, is more attention to seeds. It should be kept in mind that most of our cultivated crops are plants in an unnatural state; that many are not known in their wild form. The aims of cultivators should be to prevent their crops from degenerating. Our great crop, Indian corn, needs the greatest care with its seed. Each farmer can, by care in selecting his seed, so improve the quality that not only will the yield per acre be materially increased, but the weight of the grain to the bushel improved. Selection of seed for next year may be made before cutting. At this time those stalks that bear more than one ear, and the size and shape of the ear are the most readily noticed. Seed wheat may be greatly improved. Those farmers who do not grow a large breadth of wheat should take all the more pains to get a paying crop. Sow, or rather drill in, the wheat on well prepared ground. Run the seed through the fanning mill several times in succession to blow out imperfect grains and trash. If smut is feared wet the seed grain with a solution of sulphate of copper, also known as blue stone and blue vitriol, four ounces to a gallon of water. Use one quart of this solution to wet a bushel of new wheat; if the seed be old use three pints; shovel over the pile several times. After drilling in the seed, open all the water furrows. Corn should be cut before severe frosts.... If there is danger of frost push the work of cutting fodder corn, as it is not hurt by frosts if cut from the roots. Buckwheat is to be cut while the dew is on to prevent scattering, and before the frost injures it.

Live Stock Notes.

The heavy work of the summer has left team horses somewhat reduced. They should have the best of care to keep them up for fall plowing, and other work yet to be done. They should be fed good sound old oats, and be well groomed every day.... Mares that are weaning their foals sometimes fail to dry up their milk readily. In such cases they should be milked every day until they dry up.... Cows should be sheltered from the chilly dews at night, and from cold rains at all times.... Boar pigs that are left entire should be kept apart from the rest of the herd. If the hogs are not in pasture rich enough to supply all they require it should be supplemented with other food. Corn meal and bran in equal parts make a good ration for growing hogs. Milk and buttermilk, all there is to spare, should be fed to them throughout the season.... Lambs that are intended for the market should be kept in growing condition. If weaned, a little oil meal boiled to a jelly and mixed with milk is an excellent ration for them. Cull out the flock and fatten off all sheep that fall below the proper standard of excellence.

Flower Garden and Lawn.

The lawn should by this time have so far recovered from the effects of the hot months as to allow of more frequent cutting to encourage the growth of green grass. Seed on the thin places will usually help in the cool nights, and restore the verdure.... Dahlias, phloxes, gladioluses, etc., which supply the brilliancy of this season, are mostly tall growing plants, which one of our severe autumnal gales may prostrate in desolation. A judicious use of stakes may prevent their destruction. Stakes should be strong but not conspicuous and concealed by the foliage. .... Chrysanthemums that are to bloom indoors should be potted as soon as the buds are well formed and set in a sheltered place until they recover. Those wished in the open borders should be staked, and as well as those in pots be kept free from insects. .... The black plant louse, often so troublesome, may be treated to tobacco water; pick off the hairy caterpillars that often devour the foliage. Lilies are apt to have the leaves injured by caterpillars and other insects. The foliage should be kept in good condition to encourage the ripening of the bulb. The spent flower-clusters upon hardy herbaceous plants, as well as shrubs, are often more conspicuous than ornamental. Seeds of these are rarely wanted, and it conduces to neatness if these are cut away.

Kitchen and Market Garden.

If a piece of ground is not occupied by some useful crop, weeds will take possession and cause useless work in removing them. As soon as a crop is removed, plow and sow another. Spinach may be sown in drills, for wintering over. It should be kept free of weeds, and if large enough, it may be thinned out this fall for market or use. This will allow the remaining plants to grow stronger and become better established for the winter. If covering is needed, do not apply it until the surface of the soil is slightly frozen. The strap-leaved turnips may be sown on such places, either broadcast or better in drills. They are useful to feed to stock, or may be marketed. The ground may be occupied with a crop of rye, which may be fed to cows next spring, and afford a heavy crop to turn under as a green manure. Save seed of sweet corn with care; do not use what is left after the best is picked. Save a row or part of one, which is to be exclusively for seed. If there is a surplus, dry it for winter. Boil the ears before cutting it from the cob. If there is no evaporator or drying machine, one may be made by the use of hot-bed sash, placed over a tight frame, make several holes at the bottom of the front of the frame, and others near the top in the sun for a circulation of air, and cover with wire cloth to keep out insects and birds. Of course the sun is the source of heat to be used. A very fine article may thus be made....Cabbage and cauliflower must be forwarded by frequent stirring of the soil, as should celery and all root crops which the leaves will allow working among. Cucumbers for pickles grow very rapidly, and if a small size is needed, go over them daily or many will get too large. Always cut with a stem attached; cut away all that are too large to prolong the bearing, saving the best shaped for seed....Prevent the vines of sweet potatoes from taking roots at the joints by lifting them. In Northern localities some good sized roots may be "filched" from the ridges by opening them and carefully removing the large potatoes without injuring the small ones, which will increase all the more rapidly....Tomatoes should now be at their best, and catsup and tomato sauce should be made before the pulp gets thin and watery. The large worm will still annoy and should be destroyed. Much of the fruit will fail to ripen before frost. Cut for use all the green fruit needed for pickles, and remove the rest. Collect for seed the most perfect fruit; squeeze into a bowl or other vessel, and pick out all but the seeds and pulp; let it stand (adding some water) and ferment, until the mucilage attached to the seeds may be washed away; wash, clean and dry....If cabbage and cauliflower plants are to be wintered in cold frames for spring planting, the seeds should be sown this month in the open ground. Near New York the 12th and 16th of the month are the usual days for sowing. From one lot or the other plants of the right size are usually produced.

THE PROPER SELECTION AND CARE OF SEED CORN.

The AMERICAN AGRICULTURIST has made an extensive investigation into the methods employed by American farmers in regard to seed corn. Several hundred careful reports, all from practical corn growers of long experience in their respective localities, are summarized in this article, which should have weight accordingly. As one authority well says, "Farmers will reap veritable golden grains if they will but follow the advice of the AMERICAN AGRICULTURIST in this important matter."

It is true in all parts of the country, and even more true within the corn belt than outside of it, that comparatively few farmers exercise proper care with seed corn. A number of most intelligent men of wide observation, in different States, agree that our corn

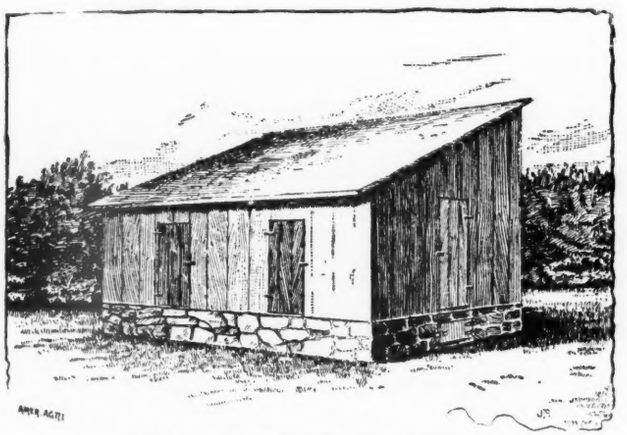


FIG. 1.—A CORN-DRYING SMOKE HOUSE.

crop would be fully ten per cent larger if all used the best seed. Many estimates far exceed that figure. But this would add about one hundred and fifty millions of bushels to our annual production, and increase the farmer's cash receipts from corn by nearly $60,000,000. Unquestionably, one who grows corn largely cannot spend his time more profitably than in properly securing his seed corn. And but very few farmers can plead ignorance for not doing this. As that good Wisconsin farmer, Hiram Smith, writes, "their failure to do so is too often owing to their shiftless neglect."

We want seed corn not only true to name, but that will grow vigorously from the very start. It must possess not only good germinating power, but a vitality that shall push forward the plantlet until large enough to avail itself with avidity of the nutriment in soil and air. Such seed will be almost sure to thrive in any properly prepared soil at all adapted to corn. By no process, however, can such seed be insured from replanted corn that stand so late as to become thoroughly frost-bitten before well cured. Selecting seed corn at husking, after it has fermented for days in large piles, is not the best plan either. Don't hang the selected ears in the granary over bins of sweating grain—a common practice. Dumping the corn in the crib, and selecting for seed only what is left in spring, is still worse, and a method far too generally in vogue.

The essentials to securing good seed corn are these: Select the choicest ears from corn that has not been frosted, or that was well cured before frost, gradually dry it very thoroughly, and keep it perfectly dry, and away from frost and from all vermin until ready for use. Dampness and mould must be guarded against. Various systems and details of management are employed to obtain these requisites.

A large and yearly increasing number of farmers prefer to pick corn for seed as soon as it has glazed; some take it while still in the dough, others wait until the grains have shrunken a little, but all who go by this plan pluck the ears long before frost. The best developed and heaviest and most regular ears are chosen, in Northern latitudes (where earliness is necessary) those most mature, with the brownest and loosest husks. Where earliness is the great point aimed at, mark the first ears as they appear, so that the best of these can be taken at the right time. Avoid abnormally large ears unless perfectly filled out; choose ears with the smallest cob; take only those the rows of which run even and full to both ends, making the ear perfectly filled out; reject all ears that show any imperfection. Select ears only from vigorous stalks, large at the ground and the more tapering the better—the object of this being to secure a stand that will not easily blow down. Some growers, especially in Ohio, between latitudes thirty-nine and forty, and also in Wisconsin, are particular to choose from stalks bearing but one ear, and the closer it is to the ground the better, believing this course gives a growth that will withstand all ordinary wind storms, while permitting such an increased number of hills or stalks per acre as to give a maximum crop. But by far the greater number of reports urge to select from stalks bearing two or more ears. The late secretary of the Georgia Agricultural Society, Hon. E. C. Grier, made a great point of taking only the top ears from such stalks, and in a few years so improved his corn that it was famous.

The husk is usually left on ears gathered thus early from the standing corn, so that they can be braided in traces. Make the traces small, containing not over half a bushel of ears at the outside, and less would further reduce the risk of heating. Several very careful farmers tie only two ears together, and hang them over a wire, being careful even to prevent one ear from lapping over the other. Hiram Smith warns that if three or four ears lie close together while still green, fire-drying will not save it. He hangs the single ears on a wire, by the staples used in fastening butter packages, and if in an upper room in the house it does not require fire-drying. All who pluck seed corn early emphasize the value of having it well cured where it cannot be frosted. A Nebraska farmer, W. R. Harris, does this by hanging the traces of ears over a wire strung in the roof of the barn, where the air circulates freely. Most farmers hang in a protected shed, hot house, or dry airy room for several weeks, always where it can get much sun. Kiln-drying is recommended by many, if the above means are lacking, to have the corn, and specially the cob, perfectly dried before severe weather, or if it is to be secured in large quantities.

A great many successful growers' reports favor selecting seed corn at the time of harvesting or husking. Their theory is that the perfect ripening on the stalk will produce seed of more vigor, in spite of early frosts, than the early plucking from the stalk. With Dent corn, the ears of which turn down and shed the rain when ripe, a better selection can be made when they can be seen and handled on the stalk at harvesting. The best ears are thrown into a barrel or box in the wagon, separate from the rest of the crop. In Fulton County, Ky., famous for its sixteen to twenty-four rowed "Harris corn," the effect of the first frosts is desired as well as the perfect sun-drying, and so carefully is the seed chosen by D. W. Dickinson, that only ten or fifteen bushels are secured in a crop of one thousand bushels. Another plan is to select the seed ears at the time of putting into the crib. John Gould and others who practice selection when husking, previously examine the growing corn and choose from the portion of most vigorous growth. J. E. Woodford, of Kansas, thinks it important to pick the ears with husks on before the stalks are cut and shocked, if very late husking or saving the fodder is practiced. Waldo F. Brown, of Ohio, and other equally good farmers, prefer to wait until November before selecting. S. A. Frazier commends the Southern Illinois custom of cribbing the whole crop with the husks on, and selecting the best for seed as it is fed out; he believes the husk is the best and Nature's own protection against vermin, insects and atmospheric changes. Many Iowa farmers select at husking, if their supply of fine ears saved from the early picking for hog feed is not sufficient. Most of those who select seed corn at harvest or husking employ special means to dry it quickly and well. Fire-drying in some form is generally used. The corn is hung over the kitchen stove, in traces or on wire; or spread very thinly on the floor of the loft above (J. M. Fickle, of Iowa, is careful to have the ears at least an inch apart); or place the corn in a swinging rack of lath suspended near the kitchen ceiling or farther down in some dry and airy room; or neatly pack on a wide shelf near the kitchen stove; or place in baskets on such a shelf, so as not to have too much in one bulk. In all these methods it is understood that the corn is protected from steam or dampness, as well as from all frost. There is small danger of its being too hot. Where the above means are not practicable, drying in a kiln or smoke-house or dry-house of some sort is insisted upon. Several tiers of shelves made of open lath work, as shown in figure 2, may be arranged one above the other in a sort of smoke-house, as in figure 1, and a slow fire kept as for meat, smoking the corn as well as drying it. Cover each floor a foot deep with the

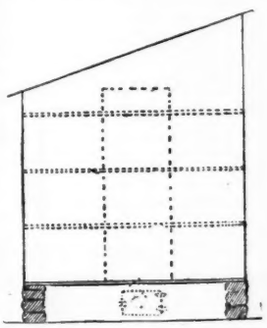


FIG. 2.—SHELVES OF DRYER.

selected seed corn before freezing weather, and dry it with a slow fire of hard wood or corn cobs, smoking until perfectly dry. An occasional fire during long wet spells is good to prevent moulding. It can winter in no better place. Such corn has not failed in twenty-three years to give a good stand at the first planting.

WASHINGTON TERRITORY FRUITS AND VEGETABLES.

T. J. MAY, SKAGIT CO., WASH. TER.

We have growing here a wild crab apple which may eventually be found to be very useful as stocks on which to graft, especially when the trees are to be planted on low, wet land; for they seem to thrive best around the edges of the marshes, where the water stands until June and sometimes later, and where the bushes are so thick that a jack rabbit can scarcely get through. There they grow and thrive, and often reach the hight of fifty feet and sometimes two feet in diameter in the body. The wood is as sound as a dollar. A rotten crab apple is rarely seen, even in the largest trees. They grow up, up, up, until their tops get too heavy for their roots and then over they go prostrate on the ground; but that does not end their existence. Sprouts will spring up along the trunk and at the roots, and where was one tree before will now be many. These old bodies will lie there sound for an indefinite period—in fact they never seem to rot. The fruit is about the size of small cherries, and is used here for making jelly, which is considered very good. Soon after I came to this country, which was about six years ago, I cut off the top of one of these trees that stood in the edge of my clearing, and grafted in the top in order to test the matter as to whether or not they would make good stocks. Some of the grafts grew and flourished finely, and last year bore about a peck of nice Bellflower apples. This year twice as much fruit as last year has set on it.

Blackcap raspberries grow wild all over the Skagit River Valley. Wherever a piece of land is cleared they spring up. The canes are immensely stout, sometimes as large as one and one-quarter inches in diameter, and they bear enormous crops of fruit, which as to size will, I think, hold their own against any blackcap extant, but in point of flavor they are deficient.

Most cultivated fruits do well. Apples, pears, plums, cherries, and all small fruits do splendidly. Some peaches are raised here every few years, but many of them of inferior quality, owing principally to the kind of trees planted. At first anything was planted and the consequence was a lot of bitter, worthless fruit. I think by a judicious selection and proper care we can raise first-class peaches. Grapes can be grown here in favorable localities, though they have not been fairly tested yet; but strawberries excel everything. I raised some Sharpless this year that were immense, some of the largest measuring nearly three inches in diameter. Vegetables, such as potatoes, turnips, beets, carrots, parsnips, onions and peas, do wonderfully well here.

Beans, corn, tomatoes and all the early kinds of the melon family can be grown here, but at a disadvantage, except the English bean, which does finely here. On the islands in this territory four hundred bushels of potatoes are considered an average crop. This country has a bright future before it, but it needs capital to develop it. All of the settlers, with a few exceptions, started poor, and some of them without a dollar. Under such circumstances progress must necessarily be slow, but it will loom up by and by as a star of the first magnitude.

WHY COMPETENT APIARISTS ARE SCARCE.

J. H. MARTIN, NEW YORK.

The first notable reason is the fear of stings, for the apiarist must receive more or less stings during the season. Protection can be and is used to a certain extent, but too much care in protecting all portions of the body hampers one for effective and rapid work, and in a large apiary such work is necessary in the busy season. The effect of bee poison is very different upon different individuals. In some, the more stings they receive the greater the effect, until it becomes a dangerous occupation for them. Others are affected less and less until but little pain and no swelling are experienced. The system becomes pickled through, as it were, with the poison, and a dozen stings can be taken with impunity. But it is evident that only one in about ten thousand is willing to put himself through this process.

Again, there are but few apiaries large enough to employ a man except for a short time during the year. One man can run from one hundred to three hundred colonies with but little aid. It would require an apiary of five hundred swarms to need the aid of an assistant the year round. The business is very uncertain also. We may have a fine flourishing apiary this year with a product of tons of honey, yet next spring we may come out with a quantity of empty hives, or perhaps the secretion of nectar is cut off by a drouth and there is no revenue coming in, and the assistant finds his occupation gone. Many look upon bee culture as a little business and not worthy the attention of the enterprising. There are but few persons among those who hire out who are disposed to give the pursuit the necessary study to become proficient in the business.

When honey becomes a staple article, when bees can be generally wintered as safely as cattle, and when apiaries become larger and more numerous, or when a person can safely invest several thousand dollars in the business with a reasonable assurance of a profitable investment, then there will be found assistants who will take up the business as a profitable life pursuit. At present, the large apiarists must educate their own help, and the beekeeper on a small scale must educate himself.

IMPROVEMENT OF SEEDS BY SELECTION.

C. L. ALLEN.

Selection is the basis, the foundation principle, upon which all the operations of seed-growing depend for success. It is in reality all there is of importance in this great industry. In every phase of the business, selection is first and foremost. For all practical purposes, the broad significance given selection by modern thought is useless. The practical horticulturist justly interprets selection as "a choice." From a business standpoint the importance of the preservation of any desired and well-defined type of vegetable, fruit or flower, cannot be overestimated by the intelligent horticulturist and gardener, as it is to them the seedsman is indebted for nearly every improvement in variety and form of vegetable and flower. I cannot recall an instance where the seedsman has originated a variety bearing his name, or one that he has introduced to his customers under an appropriate one; he is in all cases indebted to the agriculturist or horticulturist for the "novelties" he disseminates.

The many truly distinct types or varieties of vegetables, fruits and flowers have resulted from causes but little understood or appreciated by those who are, or should be, the most directly concerned. Much credit is given the hybridist for his efforts to procure new forms, rare combinations of colors, delicious properties in vegetables and fruits. Much is due him, not because he has effected some desirable crosses and hybrids, but because he has commenced an important work. When the hybridist has effected a cross, his work has but just commenced, and must be followed by constant systematic selection to make it valuable. When a cross has been secured the future progeny will show all the variations in form and color that can result from a mixture of the original colors. Some will be very nearly like the one, some quite as closely resemble the other parent; and the differences in form will be no less striking. A bed of seedlings from any systematic cross will show as many varieties as there are plants, no two will be exactly alike in color and form. Should one or more of the forms be considered worthy of being perpetuated, the seeds from these must be saved, and from their offspring a selection of the desired type must annually be made until it has assumed a distinct character. This character will not remain constant if the care in selection necessary to produce it is not kept up. "Eternal vigilance" is the price that must be paid to retain a prize after having secured it; one year's neglect will vitiate the well directed labors of a decade. This field of labor is a wide one, and if properly worked will yield a vast amount of pleasure, and a satisfactory profit.

There is scarcely a variety of flower or vegetable which cannot be further developed and improved by special effort in cultivation and selection. And there is not a seedsman in our country that would not pay a more than remunerative price for any well-defined type of vegetables or flowers that show merit not already possessed by others. These can readily be obtained to an almost unlimited extent by making of them specialties. General work will not accomplish the purpose; it must be systematic and persistent. Almost everyone has a favorite flower, fruit or vegetable—some hobby in the vegetable kingdom. Let him ride it well and he will win the goal. Let him develop his specialty to the highest degree of excellence, and he will not only receive suitable financial remuneration, but he will have the satisfaction of knowing that he is a public benefactor.

BUFFALO BILL'S HORSE CHARLIE.

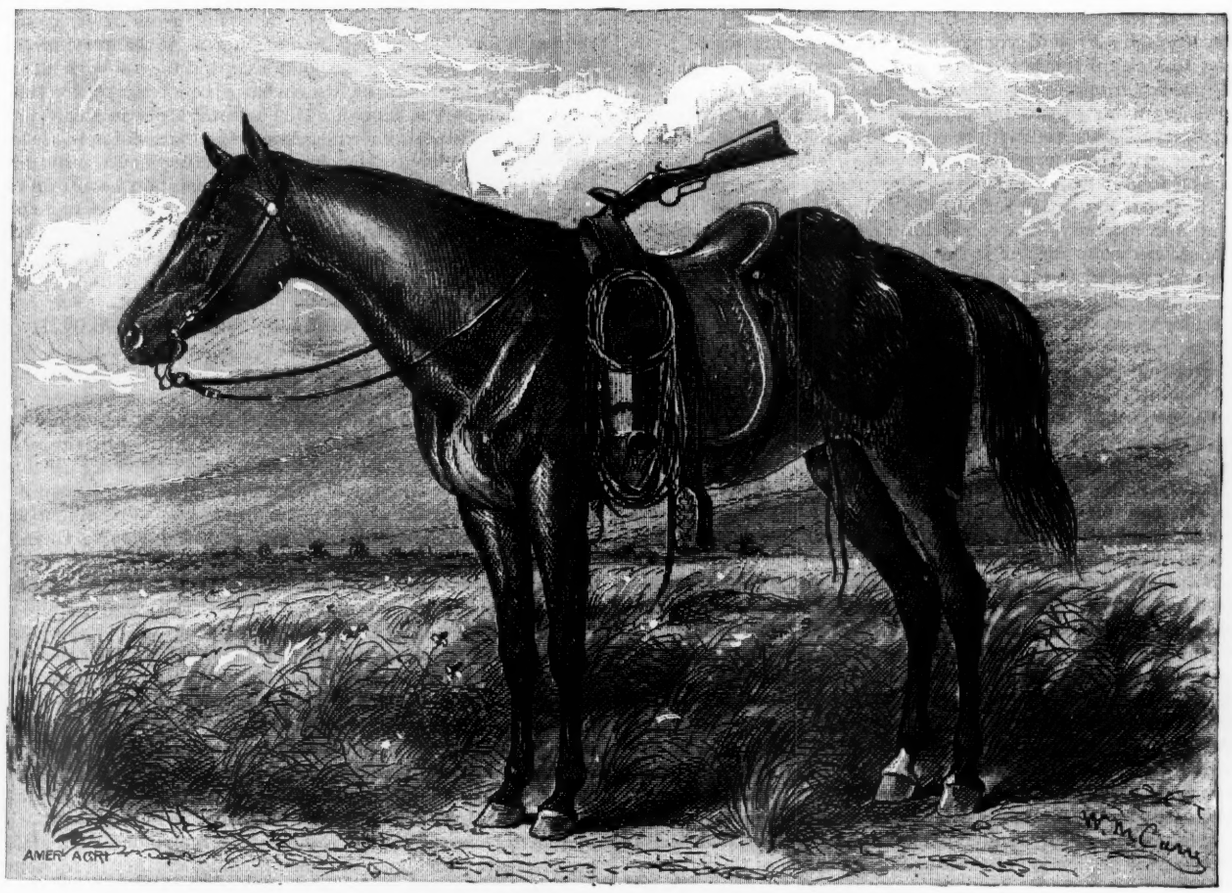
WILLIAM S. CODY (BUFFALO BILL).

My gallant and faithful horse Charlie, which found a grave beneath the weltering waves of the Atlantic Ocean, was twenty years old at his death. He was a half-blood Kentucky horse, and was bought for me as a five-year old in Nebraska. From that time he was the constant and unfailing companion of my life on the Western plains and in the "Wild West" exhibition. He was an animal of almost human intelligence, extraordinary speed, endurance and fidelity. When he was quite young I rode him on a hunt for wild horses, which he ran down after a chase of fifteen miles. At another time on a wager of five hundred dollars that I could ride him over the prairie one hundred miles in ten hours, he went the distance in nine hours and forty-five minutes.

When I opened my "Wild West" show at Omaha, in May, 1883, Charlie was the star horse, and held that position at all the exhibitions in this country and in Europe, where I took the show in 1887. In London the horse attracted a full share of attention, and many scions of royalty solicited the favor of riding him. Grand Duke Michael of Russia rode Charlie several times in chase of my herd of buffaloes and became quite attached to him. In May last, the English engagement having closed, we all embarked on the "Persian Monarch" at Hull for New York. On the morning of the 14th I made my usual visit to Charlie between decks. Shortly after the groom reported him sick, and I found him in a chill. He grew rapidly worse in spite of all our care, and at two o'clock on the morning of the 17th he died. His death cast an air of sadness over the whole ship, and a human being could not have had more sincere mourners than the faithful and sagacious old horse. He was brought on deck, wrapped in canvas and covered with the American flag. When the hour for the ocean burial arrived the members of my company and others assembled on deck. Standing alone with uncovered head beside the dead, was the one whose life the noble animal had shared so long. At length with choking utterance he spoke, and Charlie, for the first time, failed to hear the familiar voice he had always been so prompt to obey:

"Old fellow, your journeys are over. Here beneath the ocean billows you must rest. Would that I could take you back and lay you down beneath the verdant billows of that prairie you and I have loved so well and roamed so freely; but it cannot be. How oft at the most quiet hour have we been journeying over their trackless wastes! How oft at break of day, when the glorious sun rising on the horizon has found us far from human habitation, have you reminded me of your need and mine, and with your beautiful ears bent forward and your gentle neigh given voice as plainly as human tongue to urge me to prepare our morning meal! And then, obedient to my call, gladly you bore your burden on, little knowing, little reckoning what the day might bring, so that you and I but shared its sorrows and pleasures alike. Nay, but for your willing speed and tireless courage I would many years ago have lain as low as you are now, and my Indian foe have claimed you for his slave. Yet you have never failed me. Ah, Charlie, old fellow, I have had many friends, but few of whom I could say that. Rest, entombed in the deep bosom of the ocean! May your rest nevermore be disturbed. I'll never forget you. I loved you as you loved me, my dear old Charlie. Men tell me you have no soul; but if there be a heaven, and scouts can enter there, I'll wait at the gate for you, old friend."

Whereupon Charlie was allowed to slide gently down a pair of skids into the water. The accompanying engraving is a lifelike portrait of Charlie when at the age of fifteen years.



"CHARLIE," BUFFALO BILL'S FAMOUS HORSE.

Marketing Apples.—I have sixty acres of orchard coming into bearing. My plan is to assort my fruit into four grades—extra, first, second and culls. The extras must contain only the very choicest specimens and be put up in smaller packages than the first or No. 1, which will be put up in full standard sized packages and will contain nothing but fair sound fruit of uniform size, as near as may be, and always graded up to the same standard, marked accordingly, and shipped to reliable commission men. The third grade, or No. 2, will be good, sound fruit that is not up to the standard of No. 1, and will go to the evaporator, while the culls will go to the cider press and then into vinegar. By a strict, uniform system of grading and packing, I am not ashamed to have my name appear on the package. GEORGE B. ARNOLD.

THE BEST USES FOR SURPLUS FRUITS.

Fruit growing has already become one of the largest, most productive, reasonably profitable and most abused of our agricultural industries. How best to dispose of the surplus, so as to prevent the losses and abuses that now exist, is a question that is agitating the minds of some of the best thinkers of the day. As yet, no really satisfactory solution has been worked out, according to the extensive inquiry which the AMERICAN AGRICULTURIST has made into the subject. But much information has been secured which, properly applied, may be of great financial profit to our readers.

In the first place, the "surplus" of fruits is very often far larger than it need be, the amount depending upon the simplest principles. The better the varieties, the care and culture, the gathering, packing, transportation, handling and general appearance of the fruit, the greater the demand and the less the surplus. Rarely is a strictly first-class package of fruit found in the surplus; while some shiftless, foolish growers are always raising and selling "surplus." The first step should be to reduce the quantity—not of fruit, but of poor fruit thrown upon the market. Endeavor by combination through a Fruit Exchange, as is done in Michigan and New Jersey, to look up the best markets in our own country, and to devise the better means of reaching the distant consumer.

The testimony in this inquiry of many of the most successful horticulturists also agrees with remarkable unanimity that the local market is often but partially developed. Heavy shipments are rushed off to glut the large centers, while many smaller towns are eager to pay a somewhat better price for what they need, if it is presented in attractive shape. Seeking new markets in cities and mining towns more distant is the refuge of many in the Middle States and west of the Missouri River; these places, about which comparatively little fruit is as yet grown, are one of the best outlets for surplus stock, both of nice fruit, cider, vinegar, evaporated fruit, etc. The men who marketed at a loss in Chicago may now be making a profit by shipping to frontier markets, but they naturally keep quiet about it. Others, like the Californians, have aimed to produce varieties for certain purposes—local markets, commercial canning, Eastern shipment and drying—and so have proportionately less of a real surplus than is common in the older States.

Making jellies, apple butter, jams, etc., by the growers of the fresh fruit has brought them in competition with city compounders, whose raw material consists of glucose, cheap sugars, alum, aniline dyes, and chemical flavoring extracts. In appearance, any advantage is in favor of this compound. The difference in the cost of this product and straight goods enriches the one and impoverishes the manufacturer of the other. The jelly-makers of Western Pennsylvania, Ohio, and New York, have found their business ruined and unprofitable plants on their hands. A few still make standard goods and others operate evaporaters and run the skins and cores into "jam." Canning is still more or less satisfactory, and canneries are constantly multiplying. Pure apple butter "without worms or finger nails," in other words, made from nice fruit in an absolutely neat manner, is a profitable specialty with some. These products may be easily and cheaply kept, and disposed of when the market is favorable. Artificial or adulterated cider, vinegar and wine have also robbed the production of these articles of much of their former profitable return. But the best grades of honestly-made goods still pay, especially when the reputation of one's brand is established.

A. R. Whitney, one of the most extensive orchardists in Illinois, uses ninety-eight per cent of his great apple crop for cider and vinegar. Much poor fruit forced upon the market to depress prices could be better fed out to stock where grown. Hogs do well on fruit of all kinds, and cows will thrive on apples if fed carefully; cows vary in their ability to eat apples without injury, and should be given only a quart or two at first, gradually increasing the amount as experience shows they can stand it. This is, indeed, about the only way to use the early surplus of fall fruit, and the windfalls, wormy apples and knurly fruit.

On this point A. W. Sias, of Minnesota, writes: "My advice is to convert your orchard into a hog pasture as soon as the trees come fairly into bearing. I have in mind an orchard near Rochester, N. Y., that has been pastured with hogs for thirty years, and I know of no orchard of its size in the whole country that has produced more fine fruit. Orchards treated in like manner in Minnesota produce similar results. There is a Northern Spy tree in the old orchard mentioned that measures twelve feet in circumference."

The final resort with the surplus is to dry it by the many evaporating devices now in use. The general testimony agrees in the profitable character of this system. Comparatively few failures with approved evaporators are reported, but low prices for the product make large returns impossible for surplus thus used. The most money in evaporating is made by the large concerns who buy in large quantities at very low rates and make a specialty of the business. Evaporating has wonderfully developed all over the world since the AMERICAN AGRICULTURIST, many years ago, described one of the first machines for the purpose—the still popular American evaporator. For the ordinary farmer or family nothing serves better than the family evaporator, of which there are several good kinds in market. Evaporating must be conducted economically; the opportunities for waste and expense are very numerous. Machinery must be employed, and the charges for labor reduced to the minimum. Cleanliness and great care to market a good article in a neat and attractive style are also essential. The most successful evaporators use only the best fruit, not culls or seconds, as only the best produces goods that maintain their superiority and market.

Fuller details about evaporating are given in a separate article. But to make commercial canned and evaporated goods profitable, they must be planted and grown especially for this purpose; no orchard, as usually planted for shipping green fruit, is so well arranged for canning and evaporating as to be very profitable. Neither can a cannery or evaporator depend upon the irregular supplies of any neighborhood which has planted mainly for shipping fresh. This fact is illustrated on a grand scale in many parts of California. Take as an example a twelve hundred acre orchard of apricots near Tulare, with a large evaporating house near the center. Such an orchard can establish and maintain a uniform brand, and thus secure a great trade, if the goods are kept to a uniform standard, which they would be to a far greater degree than if supplied by a neighborhood of growers.

ARTIFICIAL PROPAGATION OF THE MUSCALONGE.

SETH GREEN.

The latest achievement in fish culture is the discovery how to artificially propagate the muscalonge. Undoubtedly many readers of the AMERICAN AGRICULTURIST are familiar with the splendid game and edible qualities of this noble fish. Growing, as it sometimes does, to a weight of over sixty pounds, and possessing great power and indomitable pluck, he is capable of testing both the strength of the tackle and the skill of the angler to their fullest extent. He is indeed a king among the inland fishes.

The muscalonge cast their spawn from about April 20th to May 20th, and yield many thousands of them. The eggs are quite small, comparatively speaking; ten of them lying side by side measure just an inch. The eggs of the shad and white fish measure eight to the inch and those of the speckled trout six. The eggs hatch in from twelve to fourteen days, in water ranging in temperature from fifty-one to sixty-six degrees Fahrenheit. Singular as it may seem, taking into consideration the great size and strength these fish attain, the fry when hatched are helpless little creatures. They are three-eighths of an inch in length, and until they are nine days old no outward signs of breathing can be discovered even with the aid of the microscope, though the heart's action and the circulation of the blood are strong and vigorous. So quiet did they lie for hours at a time that if I had not been able to see the blood circulate I should have been tempted to have thrown them away for dead. When the fry are eight days old they commence to show some signs of activity and are found clinging to the blades of grass placed in the vessels and also lying upon the partly submerged blades. At nine days old, with the aid of the microscope, can be discerned the mouth and gill covers in motion; the fry are then half an inch in length and the yolk sac, which is of good size, is two-thirds absorbed, in water the temperature of which should average sixty degrees Fahrenheit. When the fry are twelve days old the motions of the mouth and gills are plainly visible to the naked eye, the fish commence swimming about and have assumed a much darker color than when hatched. At fourteen days old the elongated head characteristic of this species is very perceptible, and at fifteen days the yolk sac is absorbed and the fish commences looking for food.

I have been studying the artificial propagation of the muscalonge for some years, but did not have my plans matured until a year ago, when I made my first attempt. This was unsuccessful, but so much valuable information was obtained, that when the spawning season commenced in 1888, with the aid of my assistants, I was enabled to commence the work more understandingly. Its results have been a great success and a triumph in the art of fish culture. It has been very evident in the minds of many observers

that if the muscalonge were to be increased to any extent it must be done artificially, and now that the foundation has been laid for this great work I hope to see it taken up earnestly until all waters to which they are adapted shall be well supplieb.

A SUBURBAN DWELLING COSTING $3,500.

In our series of designs for rural homes we present one herewith which combines elegance of proportions with comfort and convenience. It is drawn from designs by David W. King, architect, and is equally well adapted to the suburban resident and the well-to-do farmer. A perspective view of the building is seen in figure 1; its dimensions, including the front veranda and both bays, are: length, fifty feet; width, thirty-one feet; posts, twenty feet. The cellar, seven feet in the clear, extends under the main part forty-two feet in length, and twenty-five feet in extreme width. The floor is of cement laid on a foundation of finely broken stone or gravel, the walls to the earth line are of field stone laid in cement mortar, pointed inside, and of hard-burnt brick above. A stairway leads to it from a rear corner of the kitchen, and an outside entrance beneath the platform outside the kitchen door. The cellar is divided by partitions of hard brick into such compartments as may suit the ideas or wants of the owner. The windows are provided with double sash in winter, which in summer are replaced by screens of fine wire gauze.

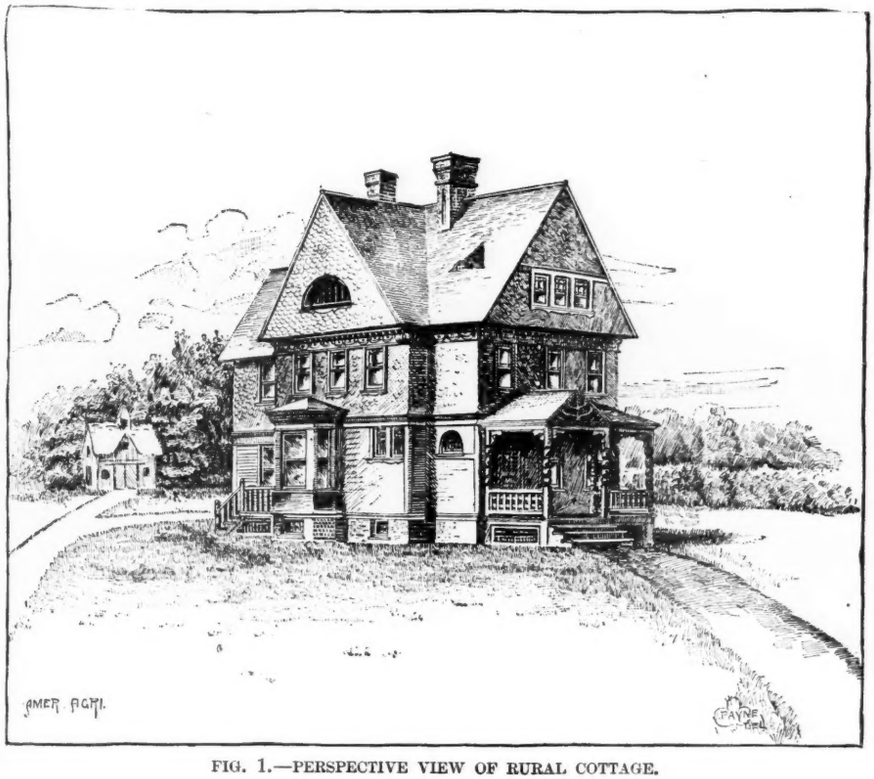


FIG. 1.—PERSPECTIVE VIEW OF RURAL COTTAGE.

The first story, figure 2, is ten feet high in the clear. The entrance hall is provided with a staircase of unique design. A short flight, protected by balusters and handrail, leads to a landing, to which access is also had by a second flight from the dining-room. The landing is divided by a sliding door from the enclosed stairway leading to the upper hall. A closet for coats, umbrellas, etc., opens into the hall, in the rear of the arch. The parlor communicates

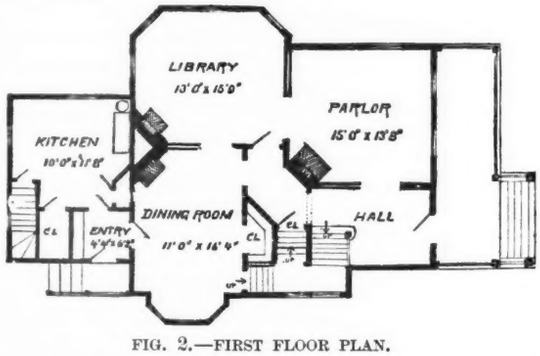


FIG. 2.—FIRST FLOOR PLAN.

with the hall and library by sliding doors, which may be replaced by curtains, if desired. An open fire-place in one corner imparts an air of homelike cheerfulness which is sadly wanting in many country parlors. The library, which may also be made the general family sitting-room, is also provided with an open fire-place. The projection with truncated angles gives an extended outlook from the windows. It is a bright cosy room, well lighted and provided with good means of ventilation. The dining-room, which is oblong in shape and is separated by a sliding door from the library, has an open fire-place, an ample bay window, and roomy closets, one of which opens into the kitchen. The hall, stairway, parlor, and library are finished in cherry or red birch, oiled on the grain; the dining-room in ash, chestnut or oak, also oiled. The kitchen is separated by an entry from the rest of the house. It is finished in pine, oiled or painted, a wainscoting extending to the hight of three feet, and surmounted by a molding.

The second story, figure 3, is nine feet high in the clear. It contains three large chambers, a rear bed-room and bath-room. All are provided with closets, and the front chamber has an alcove and small dressing-room. A stairway leads from the back hall to the garret. This story is finished in white or yellow pine, oiled on the grain. The garret is floored but not finished, and may be used for general storage. Such a house could be built for $3,500 in the vicinity of New York City.

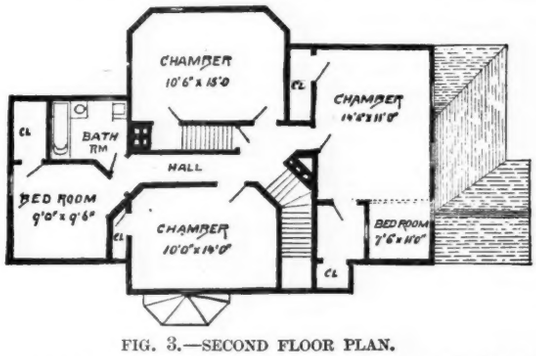


FIG. 3.—SECOND FLOOR PLAN.

May Beetles.—Very few persons except professional entomologists appear to be aware of the fact that we have more than one indigenous species of May Beetle (*Lachnosterna*). The "White Grub" so widely known as being destructive to lawn and other grasses, also to strawberry plants and many garden vegetables, is usually referred to as the larva of "The May Beetle," as though there was but one species of this insect, and this one found everywhere. We are reminded of this very prevalent and erroneous idea by the recent appearance of an exhaustive paper on the genus by Dr. Geo. H. Horn, in Vol. XIV. of the Transactions of the American Entomological Society. The author of this inestimable monograph is unquestionably our greatest living authority on North American Coleoptera. The full title of his paper is "Revision of the Species of Lachnosterna of America North of Mexico." In it eighty-one species of *Lachnosterna* (May Beetles) are described, and of these both sexes are known in sixty; seventeen have been described from males, and of this number six are unique; four from females, of which three are unique. Our entomologists have long felt the need of a thorough and careful revision of the genus under consideration, and now that the work has been done by such an eminent authority it must be highly appreciated and long remain an invaluable aid in determining the species of native May Beetles.

A. S. FULLER.

A PLAN FOR A WOMAN'S POULTRY FARM.

MISS E. K. WINANS, NEW JERSEY.

Most of the weak points about poultry farms have to do in some way with the obstinate fact that the ground which many chickens live on will get unhealthy. Even deep plowing will not keep it wholesome for more than two or three years. No matter how large the yards are, the chickens will gather often near the gate through which they know their food is coming, and the earth there and about their houses always grows sour. The land in that case so bad for chickens is in capital condition for a garden, and the hen-wife will do well if she divides her farm into halves, moving her fences and chicken houses from one side of the land to the other every second autumn. After the first outlay the moving need not take much money.

Supposing that the farmer has moderate ideas; that she means to keep five hundred hens, "going in" for winter eggs and for a modest number of early chickens, though not trying to rival the great "broiler" establishments; if she has control of three or four acres of light, dry, sunny soil she has the power of "getting her own living" in a very pleasant "state of life." She will need separate quarters for her early chickens, but the main body of her army should be put in movable houses, about thirty hens in each, the houses making a settlement on one-half of her land. If there is a stone wall around the land it can be made to help in the matter of fences, for chickens will not often cross a high stone wall. Wire fencing is the best of all. The chickens evidently feel nearer freedom when they cannot see their prison bars. It has been truly said that five hundred hens not fenced are a "disorderly mob," but to build a separate run for each flock of thirty takes more money than most poultry farmers can afford. There is a halfway measure which I find better. The space can be divided into two or three great yards, and then each house is to have a yard a few feet square, in which the chickens belonging in that house can be confined for the first week after moving them. Most of them after being let free will go home at night. Stragglers there will be, crowding in where they should not, but every one should be put where it properly belongs each evening. "That is all in the day's work." Each house should stand on a mound of earth two feet high, made by digging ditches at the north and west of the site, and making a pile four feet larger every way than the house. This is following one of the best suggestions concerning poultry that was ever made in the AMERICAN AGRICULTURIST.

In the mound should be set a frame made of four hemlock boards coated with tar. If the house is nailed together so that those boards, buried to within four inches of their tops, run all around its base, many rats will be kept out. The right time to move the chickens is in the fall, after the hurry of farm work is over, and when the moving will not interfere with the hens' laying, so much as at any other time. The chickens in the houses to be moved, should, the evening before, be put in coops and kept in a quiet, dark place until they can be shut up in their own especial yards. A week's work of two strong men will move the houses and fences of five hundred hens, if the houses are in sections. Whoever builds the houses should be told that they are to be moved. The house of this kind that I have found best is twelve feet long and eight wide. That is right for thirty hens. It is seven feet high in the middle and slopes to two feet walls at the sides. It can be moved whole, but in that case must be drawn by horses. To build them in sections easily taken apart is usually the better way.

The land that the chickens leave should be immediately plowed, and in the spring will be ready for whatever its mistress wishes, whether flowers for market, potatoes, some special crop she finds profitable, or, often better than all, a vegetable garden where the village people can be sure of finding as good peas and egg-plants as are in town markets. After the spring plowing is done, she and the probable boy who helps her can take all the care of the chickens and the farm plot, especially if they have a good little wheel-plow, with all its wonderful hoes and teeth. Gardening goes well with bringing up the young chickens. The youngest ones are excellently placed in the gardens and lawns, and a good plan is to fence in the permanent, not easily hurt things, such as asparagus, rhubarb, and the fruit bushes, and keep in that inclosure the mischievous half-grown chickens. A better plan yet is to give them a whole orchard. Never should they be put with the general flock. If possible to avoid it, the breeding stock should not be fenced in. The vigor and profit of their descendants depend very much on their freedom and happiness.

The plan of a transferable poultry and vegetable farm has been tried on a large scale, and, sad to say, has often failed. It need never fail if carried out by a capable woman with a manageable number of chickens. Few men could be contented with a flock of five hundred fowls, but women need not feel ashamed of a lack of grand ambitions; it is permitted to them to rest satisfied with little things, and often they find that it is the small farm which makes the happy farmer.

NOTES ON THE SUB-TROPICAL EXPOSITION.

P. W. REASONER, FLORIDA.

To one somewhat familiar with the education and general reading of the people of the United States, it would seem that there should be at least a moderate amount of knowledge possessed by every one in regard to the more common and important tropical and semi-tropical fruits, especially those of which vast quantities find their way to, and are consumed in, Northern cities. But that there is a deplorable amount of ignorance in these matters we learned at the Exposition. A large pyramid covered with fruit stood by the southeast door: at the base there were several rows of cocoa-nuts in the husk; above these, rows of the nut as it appears in the Northern markets (deprived of husk); then there were pomelos, and shaddocks and oranges and lemons, arranged in fanciful designs. We were approached one day by a bevy of Northern tourists who were all very anxious to find out if we could tell them "the name of those large fruits *under the cocoa-nuts.*" Of course we had a little fun; told them that there was nothing but the table "under the cocoa-nuts," etc., but it finally ended in the convincing argument of "husking a cocoa-nut" before the crowd; and unanimous were the expressions of delight when the nut which the visitors knew was disclosed. There was a cocoa-nut tree from Lake Worth about twenty feet in hight to the tips of the leaves, with about six or seven feet of trunk, and bearing a few clusters of young cocoa-nuts. It was of course a stunted specimen, as small a tree with fruit upon it as could be found, but the task of conveying it from Lake Worth to Jacksonville had been nothing less than Herculean. Although very conspicuous, and labeled plainly, it was often unnoticed, and we were frequently asked as to the whereabouts of the "cocoa-nut tree," by people who had been wandering all over the building. And when shown it, a look of disgust would settle upon the countenances, and the remark would come, "Why, I thought they grew on a great tall tree, as high as this room!" Even the fact that they were in the habit of growing tall with age was not satisfying. Now and then, however, the ejaculation would be, "I thought they grew on bushes!"

The pine-apple plants, too, were sources of never-ceasing wonder. There was ripening and ripe fruit on some of them, so the evidence that they were full-sized plants was conclusive. Nevertheless we heard many expressions of regret to find that they, too, did not "grow on tall bushes," as had been fondly supposed.

The great quantities of pomelo, or grape-fruit, on exhibition were regarded very curiously. Usually the first question asked was "whether they were good to eat, or only to look at." An initiation into the mysteries of how to eat a pomelo, avoiding the bitter membrane and eating, or rather drinking, the luscious acid pulp, so gratefully refreshing on a warm day, was usually satisfactory and convincing.

"Are those orchids for sale?" we were asked quite frequently during the day, in regard to our native *Tillandsia bracteata*, which was quite commonly placed around the pillars of the building. This is a little more difficult topic, for it requires "yards" of explanation to convince some persons that an "air-plant" is not necessarily an orchid, and if a lady, the questioner is rarely convinced at all. Orchids proper, of course, were usually regarded with open-mouthed astonishment, as they probably still are anywhere outside of the "Hub" and the "Metropolis."

Fall or Spring Planting.—The question whether it is best to plant fruit trees and shrubs in the fall or spring, must be decided not only by the climate of the locality, but by the character of the location. Where the autumn is usually prolonged, and the trees can get well established before severe weather comes on, it is usually better to plant in the fall. The soil is then warm and mellow and the work is pleasanter, and the roots find a more genial bed, than in the cold spring when the ground is long in becoming dry and warm, and other work is so pressing that planting does not receive the proper care. Whether it is decided to plant in fall or spring,

select the varieties and order the trees early in the fall, have the trees sent early, heel them in carefully, and they will be as well off as if they were left in the nursery, and can be planted at the most convenient time.

THE GROWTH OF WHEAT, AND ITS PRODUCTS IN THE MILL.—XIII.

JOHN J. WILLIS, SUPERINTENDENT OF LAWES AND GILBERT'S EXPERIMENTAL FARM, ROTHAMSTED, ENGLAND.

It is well known that no ordinary cultivated plant can thrive without a sufficient supply of each of a number of substances needed for its food. And the plant has to do not merely with the supply of nutritive elements as a whole, but also with each of its ingredients

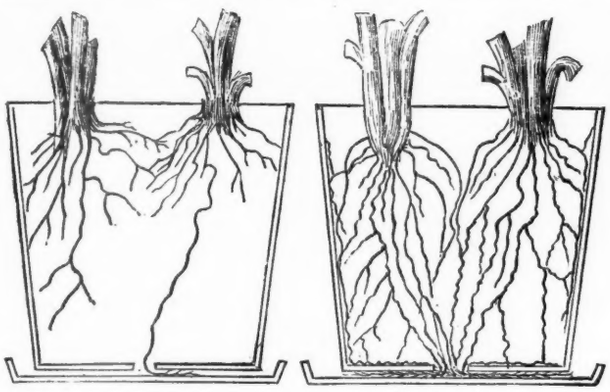


FIG. 1.—WITHOUT MANURE. FIG. 2.—WITH MANURE.

separately. Every plant we cultivate, therefore, must have a certain and sufficient amount of each one of the fertilizing agents, or it cannot grow to perfection. The crop cannot rise above the level of the lowest element in the food-supply. It has been shown conclusively in the previous articles upon this subject, that if the manurial or available food-supply comes up to the required standard, and other conditions are favorable, a good yield of wheat is certain; but if any one element falls below the requisite standard the crop must fail in proportion.

A soil may be deficient in available nitrogen, potash, phosphoric acid, or lime; or it may be so compact in its texture that air and moisture cannot get into it to nitrify the crude materials it contains, nor the roots make their way through to obtain the food that has been made usable. It may, on the other hand, be so loose and non-retentive that the food-ingredients will escape in the drainage water through the soil. It may be so dry that fertilizers will be dormant, and the plants wither on it; or so wet and cold as to prevent their growth. Most agriculturists have had experience of the conditions mentioned, but we venture to assert that by proper tillage and amendments the texture of the soil we have to deal with may be improved, its power of holding water and supplying plant-food increased, and then by suitable manuring it may be brought into such condition as to yield bountiful returns for all that is expended on it.

It is extremely important that all engaged in the cultivation of the soil should consider the structure and peculiarities of the roots of the plants they wish to grow. While the power of plant-roots to adapt themselves to circumstances is very considerable, yet as a rule they develop most freely in those directions where there is least resistance to their progress; that is, where the soil is open and mellow, and where there are abundant supplies of available food. Thus it occurs that the roots of any plant may sometimes be found at some places to have grown near the surface, and at others at a greater depth, according to the locality of the nutritious food-supply.

In the accompanying diagrams will be found four plants of wheat, two in each pot, experimentally grown at Rothamsted, by Sir J. B. Lawes, and having their roots exposed to show the ramification and development. Fig. 1 received no manure, and the seed being planted in poor soil the roots are consequently few and feeble, luxuriating chiefly near the surface; while fig. 2, which received a full manurial supply, sent forth vigorous branching roots, penetrating the soil in all directions to absorb the nourishment provided.

From these facts we undoubtedly learn that the more abundant the plant-food the better the roots are nourished and the more they multiply and extend through the soil, making the plants less dependent upon climatic conditions; and consequently the more profitable is the crop return. While, on the other hand, the roots which find insufficient nutriment remain undeveloped, and the crop harvested is poor and meager.

NECESSITY FOR CAREFUL TILLAGE.—We know from experience that all vegetable products require very careful attention to make them thrive and become profitable. It is also a significant fact that the more man is dependent upon a particular species of plant for his daily food, so much the more must his attention be given to its proper cultivation. We know, further, that different plants have very different capacities, by their roots and leaves, of gathering their supplies of food from soil and air, and so when grown in company with other plants, the stronger and often the most objectionable push out their weaker brethren.

A few years ago, Sir J. B. Lawes, wishing to see how a crop of wheat would succeed if left entirely to itself, year after year to sow its own seed, and without culture to combat with the weeds, left in one of his experimental fields at Rothamsted about an acre of wheat, which if cut and thrashed would have yielded about twenty-five to thirty bushels of grain per acre. This crop was allowed to stand, ripen, fall, and shed its seeds upon the ground. The usual quantity of seed-wheat sown is from two to three bushels per acre, but here were nearly thirty bushels of seed left to grow and produce the next year's crop. What was the result? The first year weeds and grass began to smother the wheat, and if harvested only about five bushels of grain per acre would have been realized. This was allowed to fall and seed the ground as before. The second season there was a further decline with a greater luxuriance of weeds. And so on, in each year following the number of wheat plants

FIG. 3.—SELF-SOWN WHEAT, FOURTH CROP (*Reduced one-third*).

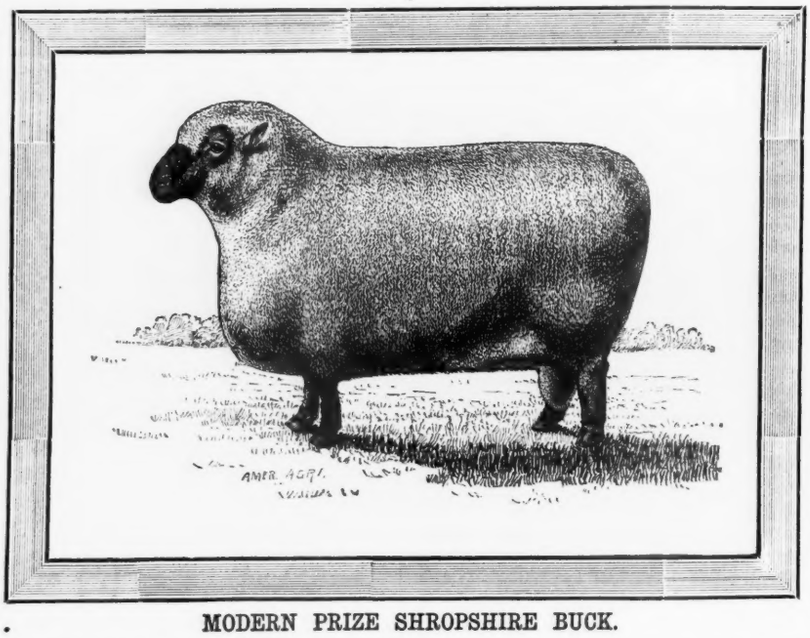
became fewer and fewer, and their character became so weak and grass-like that it was with difficulty the wheat could be distinguished from the surrounding stems of grass. The engraving, fig. 3, shows one of the wheat plants collected in the fourth year that the crop had been left to shift for itself, and shows how greatly the wheat had

deteriorated. Each spike contained about two or three wheat grains apiece. It may be mentioned that in the remaining portion of the field wheat has, with proper culture and suitable manuring, been grown for forty-five years in succession on the same land, and shows but little indication of failure. The maximum yield last year (1887) was forty bushels per acre, and the lowest yield about ten bushels of wheat per acre.

ADVANTAGES OF CAREFUL WEEDING.—Various experiments have been tried to ascertain the positive advantage derived from carefully weeding one part of a field and leaving another part undone; among these, the following, made with peculiar accuracy, may be safely relied on:

1. Seven acres of light, gravelly land were fallowed, and sown broadcast with wheat; one acre was measured off, and not a weed was pulled out of it; the other six were carefully weeded. The unweeded acre produced eighteen bushels; the six weeded acres one hundred and thirty-five bushels, or twenty-two and one-half per acre, which is four and one-half bushels, or one-quarter more produce in favor of weeding. 2. A six-acre field was sown with barley, in fine tilth, and well manured. The weeding, owing to a great abundance of charlock, cost twelve shillings per acre. The produce of an unweeded acre was only thirteen bushels; of the weeded, twenty-eight bushels. Difference in favor of weeding, fifteen bushels per acre, besides the land being so much cleaner for succeeding crops. 3. Six acres sown with oats, one acre plowed but once, and unmanured, produced only seventeen bushels. Another six acres, plowed three times, manured and weeded, produced thirty-seven bushels. Ten bushels of the increased produce may be fairly attributed to the weeding, and the other ten to the manure.

It would therefore appear that we are within the truth in saying that where weeds are not kept under there is a loss incurred of one-fourth of the crop. The weeds rob the growth with which they are mixed of some part of the food which the ground holds for the use of plants; they clog the ground mechanically; they keep air and light from the young seed; while the grain that has ripened under all these disadvantages, goes to the market worse than it would have done had it been grown unaccompanied by weeds.



MODERN PRIZE SHROPSHIRE BUCK.

THE SHROPSHIRE BREED OF SHEEP.

The Shropshire Down breed is of English origin, being the product of crossing the Southdown and possibly some other breeds on the old Morfe Common sheep. They have dark brown faces and legs, no horns, deep round chests, long bodies, full breasts, thick back and loins, well filled hindquarters, firm straight legs, well placed outside and thickly wooled to the knees. The fleece is strong and lustrous, the fiber measuring three and a half inches at least in length, and is of the quality known as "half combing wool." The wool covers the forehead to the eyes and comes well down on the legs. The rams, when fully matured and in good flesh, weigh two hundred and twenty-five pounds and upward, and the ewes nearly or quite two hundred pounds. Great improvements have been made in the breed, during the last twenty-five years, by careful breeding and selection, as will be seen by the accompanying illustrations, which show typical rams of the past and present. The large and fine engraving on the opposite page portrays a model Shropshire of the standard of 1864; the portrait on this page is that of a Shropshire buck which won many grand sweepstake prizes at Illinois and St. Louis within the present decade. Shropshires flourish in any climate where they are provided with plenty of nutritious food and shelter from rain and snow. They have become widely distributed through the fertile parts of this continent from the Atlantic to the Rocky Mountains. The American Shropshire Registry Association has a membership of about two hundred, including Canadian breeders. The fourth volume of its Register has recently been published, the four volumes embracing the records of six thousand five hundred sheep.

THE APPLE-WORM OR CODLIN MOTH.

A number of subscribers who have heard of the comparatively recent method of destroying the apple-worm or codlin moth by the use of poison have written to ask about the method of applying it; how much to use, etc. No insect shows the importance of knowing its habits, and those of the plant it infests, more strikingly than this. Every observer is aware that the young apple just after it sets has its calyx-end, or blossom-end, or "eye," pointed upwards. In a short time, as the fruit becomes heavy with growth, the stem can no longer sustain it in this position and the fruit gradually falls over, the stem curving to accommodate it, and the eye or blossom end points downward. From the fact that the ripe fruit is always seen in this position, many persons think that this—the calyx end—is the bottom of the fruit and that the stem is the top, while the reverse is true. Upon this habit of the apple in reversing its position depends the success of the application of poison to destroy the codlin moth. The habits of the insects must also be known, in order to work against them.

The parent moth is readily distinguished from other moths by a patch of copper-colored scales at the tip of its front wings. The moth appears soon after the apple is fairly set, intending to drop an egg in the cavity at the blossom end; this cavity, so readily seen in the ripe apple, is very large in proportion in the young fruit. If for any reason the egg fails of being laid in the cavity, but is attached near by, the young worm, when it hatches, makes direct to the cavity and begins to eat through the skin, working its way towards the core, where it feeds and grows. The poison used for its destruction is Paris green or London purple, the smallest portion of which, if eaten by the worm, will be fatal to it. The poison is stirred with water, a pound of either to one hundred gallons of water, and applied with spray pumps that will diffuse it in the completest manner, so that a small particle will reach the eye of every young apple; when the apple gets larger and turns, or the worm gets inside of the fruit, it will be of no avail to apply poison.

While the season is now too late to apply poison to the apple-worm, traps may be used to prevent the future increase of the insect. The traps consist of strips of carpeting or other coarse fabric; these should be five or six inches wide, and long enough to go around the trunks of the trees, and lap a few inches; they should have been applied earlier, but will do much good yet. They should be placed around the tree and fastened with a few large tacks, which should not be driven down, as they need to be drawn out. The worms when full grown leave the apple while that is on the tree, or the worthless fruit falls to the ground. When the worm makes its exit, its object is to find a secure place in which to spin its cocoon and transform into a moth. This trap affords the worm the needed shelter under which to spin. Those which leave the fruit after it falls to the ground, make their way to the tree, which they ascend, and meet with the trap, while those that quit the fruit while it is still on the tree crawl down the trunk and thus come under the trap. The cloths are removed about every ten days, and the worms that are found under them in their various stages are killed. In large orchards the insects are destroyed by running the traps through a clothes wringer. Of the worms that escape traps,

etc., the moths come forth at the last of July or first of August. These moths lay a second crop of eggs, the worms from which enter the fruit and go through the same round of destruction. Poison cannot be effectively used on these. As often they do not complete their growth until the apples are harvested, they spin in the cellar and do not come forth until spring.

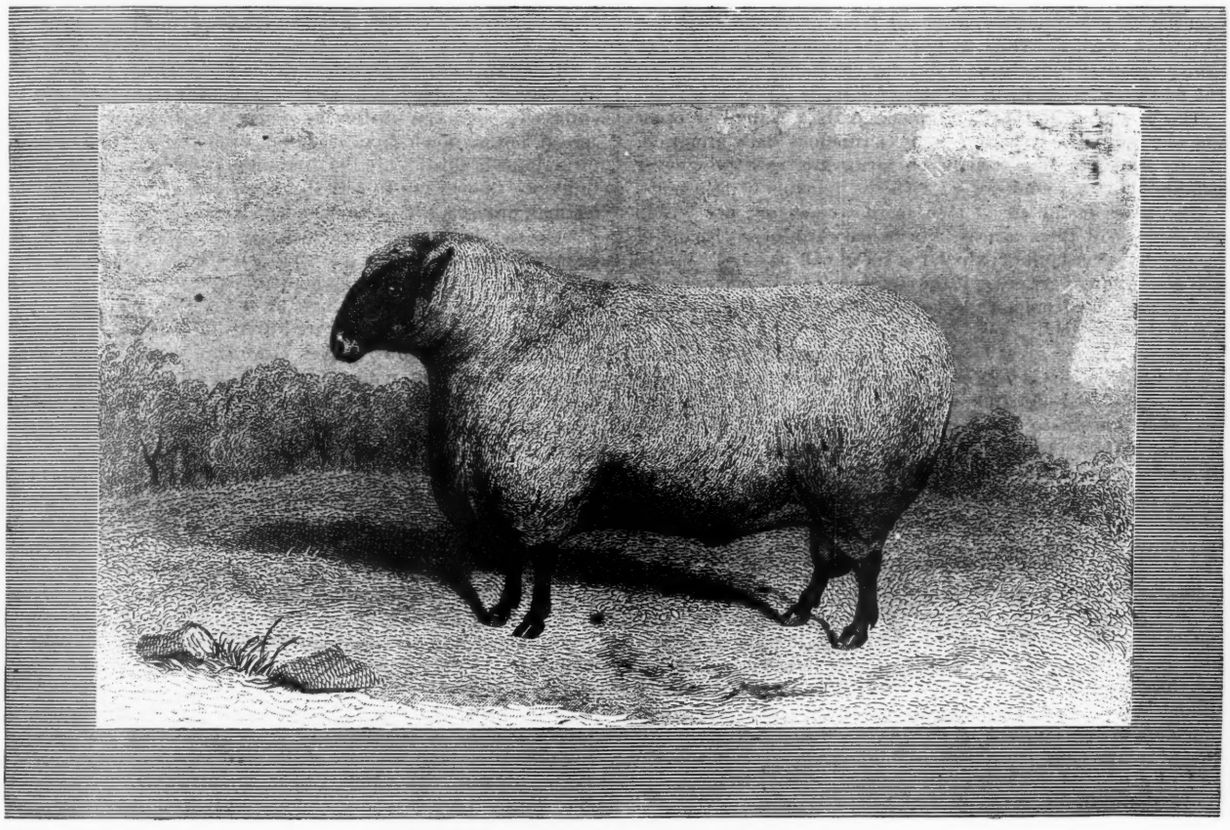
EXTRACTED HONEY.

A. H. DUFF, OHIO.

Extracted honey is coming rapidly into general favor. The fear of adulteration has been the great obstacle to its sale, but this is now largely dispelled, and people are taking hold of the article with more confidence. It is only necessary for consumers to consider a moment to convince themselves that at the present prices for which extracted honey is sold it would be impossible to produce any substitute that would cost less. In earlier times, when honey would bring from twenty-five to thirty-five cents per pound, there was an inducement to adulterate; but when honey brings only ten or twelve cents it is impossible to substitute any article with a saleable appearance except at a cost that would not exceed the price. Every bee keeper well knows that adulteration is a death blow to his own industry, and when adulteration was common, it was doubtless safe to lay the blame upon the middleman and not on the producer.

It has been asserted that adulteration is brought about by the bee keeper feeding sugar and syrup to the bees. This is impossible, for the reason that sugar and syrup feeding will never produce honey. It will simply be sugar-syrup stored in the combs, and will not be changed in flavor. The fact that bee keepers feed sugar to their bees creates misapprehension among the inexperienced. It is of the utmost importance at certain seasons of the year to feed bees, but it is only to maintain life or to stimulate brood-rearing, and is done late in the fall and early in the spring. The cost of feed brings this to an end as soon as the colony is in a fair condition. This feed is all consumed in the brood nest, and not a particle of it ever reaches the surplus boxes. When honey is abundant in the flowers, and the bees have access to it, they cannot be led away by any cheap sugars or syrups. It would be folly to furnish food at a high rate, when honey-producing flowers are supplying the real nectar in excessive quantities. Many have the impression that comb honey is the only safe honey to purchase, and that it cannot be adulterated, as can the extracted. This is a mistaken idea; one can be adulterated as easily as the other, and the temptations are in favor of the comb honey on account of its higher price.

Extracted honey can be secured in greater quantities than comb honey under the same conditions, and at a much less cost. The saving of comb is quite an item, for to produce wax involves the consumption of large quantities of honey. It has been estimated that twenty pounds of honey are sacrificed in producing one pound of wax or comb. The pure extracted honey is more healthy than comb, on account of the indigestible qualities of wax. The convenience of handling extracted honey, and the ease with which it can be kept any length of time in good condition are greatly in its favor. The granulation of extracted honey has heretofore interfered with its sale and use, but it is now pretty well understood that all pure honey will granulate, and in this condition it is preferred by many to the liquid form. In extracting, the different varieties of honey produced from different blossoms can be kept separate and the entire crop graded. Here is another point that creates suspicion in the minds of consumers. In extracted honey there are many varieties. Most people think there is but one kind of honey, and when they see two different colors they conclude one of them is not right. It is impossible to enumerate the different varieties, flavors and shades of honey, but we may safely say that in any one locality there may be twenty different kinds, at least as many as we have different genera of flowers. All honey when taken from the hives should be stored away high and dry in buildings. Never use a cellar nor any damp place for this purpose. Dampness will spoil honey, but heat never will.



OLD TYPE PRIZE SHROPSHIRE RAM.

Probably the best tonic for fowls is the "Douglass mixture." Take one pound of sulphate of iron and two ounces of sulphuric acid and dissolve in one gallon of water. Add one tablespoonful of this mixture to one gallon of drinking water for the birds.

Remove the droppings from the poultry houses every morning instead of once or twice a week, as is often directed. If this practice were strictly adhered to there would be less disease among poultry and better results generally.

Cull the fowls very closely. It will not pay to winter disqualified birds. There is more success with fewer birds and higher prices.

CARE OF CONVALESCENT ANIMALS.

MIDY MORGAN.

So much has been written and said on the care of domestic animals during sickness, and the varied ills to which they are subject have been so ably and frequently discussed, that were one tithe of the advice given judiciously carried out there would be no occasion for further remark. To treat of sickness in a general way is trenching on dangerous ground, and to give rules for particular cases is to invade the veterinary art. Such writing has caused frequent and serious loss. Unskilled farmers are not competent to diagnose cases properly, and thus error slips in, much suffering ensues, and an attack of illness, trifling at first, becomes alarming, and by the time the veterinary arrives the patient is beyond help. These difficulties do not exist when domestic animals are convalescent. Then good care and judicious nursing take the place of absolute medical treatment. After severe illnesses the greatest care is needed to restore the weakened animal to his former vigor. Good judgment is rarely exercised in the management of convalescent animals. The ignorant farm laborer says, "It is all right; he can take care of himself." No creature in a state of domestication can do that. Our horses, cattle, sheep, hogs and poultry, even our farm and house dogs, are only prisoners at large. Their instincts are dulled, their powers of self-care are restricted, by being in bondage to man.

The first great requisite in the care of animals is perfect cleanliness. This is not effected by whitewashing their stables or other shelters once or twice yearly, but by scrupulous daily attention. The mangers and feeding troughs on farms are, as a rule, never cleaned, and can be found coated with the remains of last year's feed. The most fastidious of men or of women are not within leagues' distance of the neatness of taste and cleanliness of habit of a horse or cow, after both of which the sheep will pasture. Varied growths and different grasses suit the stomachs of different animals, who in health suffer from a neglect of this rule and in convalescence suffer still more acutely.

After a long illness great lassitude exists; to build up the system is what is needed. This is best effected by administering light feeds of readily assimilated and fully digestible matter. An overfeed of oats has been known to kill a horse recovering from colic. His groom believed him restored, gave him a full ration, and the overtasked system succumbed. Cows recovering from sickness, if put into rich pasture or heavily fed in the stall, eat to repletion, and die from hoven caused by the accumulation of gas in the stomachs and intestines.

The foods best suited to restoring wasted vitality are cooked oaten meal and linseed, fully scalded, oats or barley, raw apples sliced; also raw carrots or potatoes, given sliced and *unwashed*. The quantity must be very small; two or at most three sweet, medium-sized apples, the same weight of potatoes and one or two carrots sliced lengthwise. These and like articles are only appetizers, and should be given between the stated hours of feeding. Another item in the regimen is, pure cool but not cold water. A swallow or two is most beneficial, as it tones up the stomach and fits it to receive food. A long, full draught of cold water is dangerous in the extreme; even in full health it is to be avoided, doubly so in convalescence.

The great value of quiet and restful ease is seemingly ignored. A good night's rest builds up a tired man, and sensible people procure such for themselves, but none care to provide rest and quiet for their domestic friends. Isolation is necessary in sickness to prevent its spreading and to aid recovery. The quiet secured by isolation much facilitates complete restoration to health. The worry caused by banging of doors, slamming of crazy windows, the moving in and out of people and small animals is seriously hurtful. Still a sick or recovering animal must not be left long hours alone. The weakened condition of the nerves calls for gentle, friendly intercourse; a skillful groom facilitates by his presence the recovery of his charge. Sick horses are observed to have partaken of food when given in small quantities from the hand of a groom well liked by the patient, which, if thrown into the manger, would have been smelt at and scarcely tasted.

Of all our domestic animals none are more courageous than the well-bred, good-tempered horse, yet none are more timid and in need of the wise friendship of man. In cases of exhaustion from overheating and when a rush of blood to the brain is imminent, never place a horse in a current of cold air. Get him as quickly as possible in a cool, shady place, rub and bandage the legs, put ice on the forehead (never splash a bucket of water on the poor sufferer), and drench with small quantities of gin and milk fresh from the cow; a pint of new milk and a large spoonful of gin will suffice for each separate drench. In cases of protracted exhaustion bottled beer of some good brand given in pint doses has proved most beneficial.

The dairy cow and growing heifers should be made accustomed to drink sloppy mashes of wheaten bran and steamed oaten meal, also mucilage of linseed, as these drinks are not liked until the taste has been acquired. During sickness is a poor season to commence instruction.

During periods of protracted idleness, when active exercise is impossible, it will be found most beneficial to hand rub the ears and legs, to wash out the feet at least mornings and evenings, and twice daily to give the horse a thorough grooming. The skillful use of a reasonably soft brush and of the hand will bring the blood to the surface, and will be both soothing and sanitary in their effects. When a sick or wounded horse has to be slung and his weight taken off his legs, he should never be raised so high that his feet cannot reach the ground, as to completely hoist an animal causes him fear and much consequent nervous disturbance.

HOW TO KILL CANADA THISTLES.

JOSEPH HARRIS.

Laws to prevent Canada thistles from going to seed on the highway are all very well, and we wish they were more rigorously enforced; but when thistles have once a foothold on the farm they spread, not so much from seed, but from the roots. On our own farm, Canada thistles are the greatest pest we have. And while we think we know how to kill them, we are often reminded of the German proverb, "To know is not to be able."

On the farm, there are many places where there are stones enough to prevent proper plowing. We have plowed out and dug out and drawn off stones enough to build 920 rods of stone wall, and we have not got rid of them all yet. The farm was originally heavily timbered. Good oak trees were split into rails, which were laid in the form known as the Virginia or worm fence. This was sixty years ago, but many of these rails are still sound. No fence could be better adapted to the condition of the country when they were first laid. But they occupy considerable land, or rather they prevent us from plowing at least half a rod of land. A careful farmer mows the thistles and other weeds in the corners of the fence. But on such a farm as ours, when we plowed out stones, the fence corners were the most convenient place to deposit them. There they laid year after year, till the fence rotted down, and we had stones enough to build a stone wall. No better plan could be invented for the protection of Canada thistles. What with the imperfect plowing on the stony parts of the farm, and the protected plantation in the corners of the fences, the Canada thistles found abundant opportunity to grow and spread their roots.

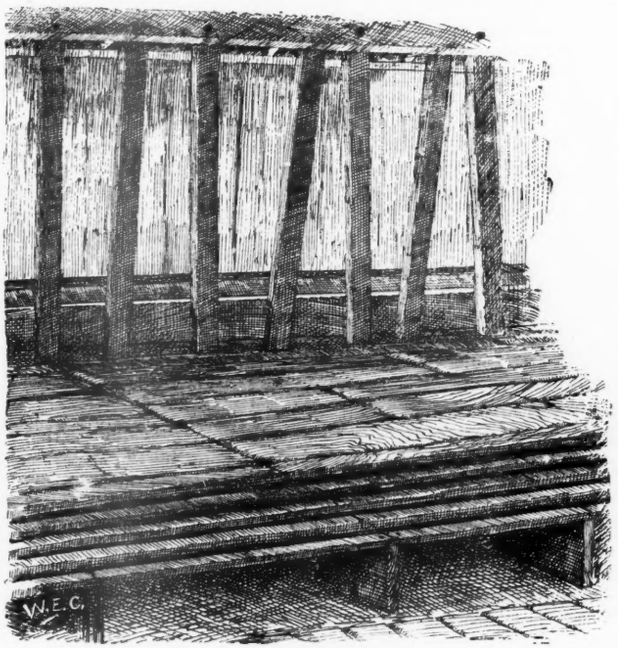
Agricultural writers sometimes tell us to cut off the thistles and with a feather put a drop of sulphuric acid on the stumps; others tell us to sprinkle a little salt on them; others say persistent mowing or cutting them off with a hoe will soon kill them. But on a farm infested with thistles these methods are as inadequate as trapping and shooting would be on a farm in Australasia overrun with rabbits. We must adopt some more wholesale method and make thorough work of the business. The old-fashioned summer fallow was an excellent method of killing thistles, but we have outgrown it. Our farmers prefer to use phosphates and grow a crop of oats or barley or other spring-sown crops instead of letting the land lie fallow. In this they are probably right, but this constant cropping creates a necessity for better cultivation. We plant corn or potatoes and give them sufficient cultivation between the rows to hold the thistles in check. The shade from the corn also dwarfs the thistles, but does not kill the roots. The next spring, the land is plowed and sown to oats or barley, and as soon as the crop is harvested the land is again plowed and sown, the first of September, to winter wheat. Grass seed is sown with the wheat in the fall and with clover seed, on the surface, the following spring. The clover is mown for hay and afterwards for seed, and the next year is sometimes plowed up again or is allowed to remain another year either for pasture or timothy hay.

Probably no better rotation of crops can be adopted in the winter-wheat growing sections. But great care must be exercised to kill thistles and other weeds, or the thistles, especially, will overrun our farms. Fall plowing after the corn or potatoes or beans are removed and thorough and repeated plowing after the oats or barley are harvested are the true methods of killing thistles. Heavy crops

of clover and grass, cut early, will greatly help to clean our land, and so will heavy smothering crops of corn fodder or Hungarian grass.

CLEAN STOCK WITHOUT BEDDING.

The cow stable at the Wisconsin Experiment Station possesses so many good points that we illustrate and explain it, and commend it to the attention of all cow owners. Like many other stables, there is no cellar under the cow linter at Madison, it being in the



A PLAIN BUT USEFUL STABLE.

basement or ground floor of the barn. There is a floor six feet wide between the two rows of stanchions, raised four inches above the bottom of the gutters. The gutters are one and one-half feet wide. From the bottom of the gutter to the top of the platform on which the cow stands is twelve inches, but as she steps into place from the floor, she has only to step up eight inches. The cows stand on a platform four and one-half feet long.

From the back or gutter-end in for one foot and a half, instead of a solid floor, five strips two inches square and two inches apart are put down lengthwise of the stable. These strips are laid on two-by-ten inch joists, to get the requisite twelve inches above the floor. These strips allow all liquid and solid excrement to fall through into the gutter, so that when the cow lies down she cannot dirty her flank or bag, even in the total absence of bedding. The illustrations make the arrangement clear. A cross joist two by ten inches runs lengthwise under the platform, one and a half or two feet from the rear, so that the manure, and chaff used to soak up the liquid, can't work in underneath where it couldn't be cleaned out.

The one-horse cart is daily backed into the stable, and with a long-handled square shovel the manure is quickly loaded, and at once carried to the field and spread. The manure is thus handled but once, a plan which can be followed in this stable where only a little fine chaff is required as an absorbent. If the manure were full of coarse bedding that should be rotted before being used on land, it would have to be composted. But whether a cellar or bedding is used or not, this style of a platform can be employed to advantage. The two-inch square strips should be of hard wood, or if soft wood is used should be protected by a strip of iron two inches wide and one-eighth of an inch thick.

The feeding floor in front of the cows has a trough six inches deep, made by nailing ten and twelve-inch planks together in V shape. In this the grain is fed. A faucet at one end supplies water for the whole row of stock at once; pull out a plug at the other end and the water will run off into a drain. The water comes from a tank in the upper part of the barn; by running a small steam pipe from the boiler up into the tank, the water can readily be heated in winter—a process which Prof. Henry finds is a great saving of feed. These little conveniences are comparatively inexpensive and they pay for themselves many times over.

A NEW EMPIRE IN THE NORTHWEST.

GEORGE A. MARTIN.

By the action of Congress and the national executive, most of the great Indian reservation in Northern Montana was thrown open to settlement, the Indian title having been peaceably extinguished. The newly acquired region extends from one hundred and four degrees three minutes to one hundred and fourteen degrees of west longitude, or from the eastern boundary of Montana to the main range of the Rocky Mountains. Its mean length east and west is about four hundred and forty miles, and its mean width eighty miles, the area being about thirty-five thousand square miles, or over nineteen million acres. A tract embracing about two hundred and eighty square miles lying around the Poplar River agency, and another of much less area between the Little Rockies and Milk River, are excepted from the purchase and still reserved. This leaves an area of about seventeen million acres open to settlement. The work of surveying it is going forward as rapidly as practicable, but it will take about two years to fully complete and file the survey and maps. Meantime a steady influx of settlers has already begun, who will acquire what is known as "squatters' rights," if they settle in good faith on the land. These "rights" will give each man an option of ninety days within which to file a claim when the land comes into the market. According to the terms of the Act of Congress no land can be acquired on the newly opened tract save by pre-emption or homestead. Thus no individual can obtain more than three hundred and twenty acres.

The Territory was recently visited by the writer of this article, and so far as could be judged from a somewhat cursory view, it seemed to fully justify most that has been written and spoken in its favor by explorers, from Lewis and Clark in 1804 to more recent ones. It is in the main a plateau or "bench land," lying north of the Missouri, and well watered by that river and its tributaries. The famed Milk River Valley extends for about three hundred miles through the very heart of the region. This valley is intersected at frequent intervals by tributaries of the Milk River. The soil is a deep black loam resting on a clay subsoil. A luxuriant growth of grass clothes the gently rolling country, broken only by the frequent belts of timber which line the streams. Wherever the primitive sod has been broken, as at the various military posts, wheat, oats, barley, potatoes, and all garden vegetables grew well. The climate is milder and the mean temperature considerably higher, at least in the western portion, than in corresponding latitudes further east. This is caused by the Chinook winds, which reach the region from the Pacific, warmed as they are by the Japan current. The climate is far from equable, however, a shift in the direction of the wind causing a change of many degrees of temperature in a very few hours. The rainfall is much more abundant than in the southern and settled portions of Montana. In 1887 and the present year the precipitation was ample for all purposes of successful agriculture. The St. Paul, Minneapolis and Manitoba railroad traverses three-fourths the length of the region, about midway between its northern and southern boundaries.

To sum up, here is a virgin tract nearly as large as the entire State of Indiana, covered with nutritious grasses, fairly well provided with water and timber, with a soil in the valleys which

MAP OF RESERVATION.

seems well adapted to producing the small grains, while the higher and more broken portions are fitted for grazing; with the climate of high northern latitudes somewhat tempered by the mild winds from the Pacific; a large portion of it traversed by a great railroad line.

We find that the best birds for breeding purposes are from one to three years old. We do not prefer pullets just commencing to lay for breeders. It is a great mistake to sell off the older hens and breed from pullets; hardier and better developed birds will be the result if bred from two and three-year-old hens.

More than one-half of early maturity is in high feeding.

THE COLLARED PECCARY.

The Old World has its wild boars, which have furnished sport for the huntsmen of all the ages, and from the wild and grisly beasts have descended the domestic hogs which have such an important place in modern husbandry. The American continent also has among its wild animals a member of the same great family. It is the peccary, of which several species are indigenous to North and South America. The collared peccary, known to science as *Dicotyles torquatus*, is found in the forests of Mexico and the southern part of the United States, where it is called the Mexican hog. The full-grown male is about three and a half feet long from the snout to the base of the ridiculous little lump which serves as an apology for a tail. The body is covered with coarse, stiff hair in rings of black and white, and on each side of the neck is a broad light ring like a collar, whence the popular name. On the back, directly over the hips, is a gland, which secretes a rank offensive fluid. They go in herds of six to ten, roaming the forests and living upon such fruits, nuts, roots, small animals, reptiles and insects as they find on the ground or can root out from it with their long, powerful snouts, never hesitating to break through into cultivated fields and lay them waste, whenever they find a chance. They find shelter in caves and hollows, their favorite refuge being the hollow trunk of a fallen tree. Into such a retreat they enter backward, the young first, leaving the patriarch of the herd next to the entrance. Their flesh is very white and delicate, and it is a favorite sport with the Mexicans and Indians to hunt them out of their sylvan shelter. In an open encounter the peccaries are very lively game. Forming a

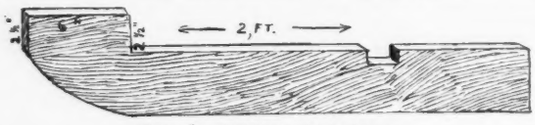


FIG. 1.—RUNNER DETACHED.

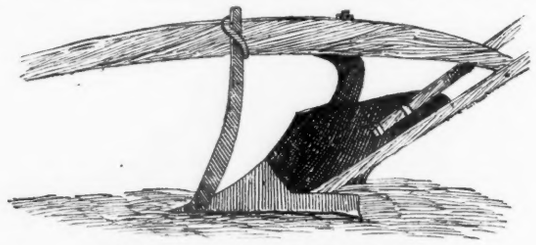
ring, with the young in the center, the mature animals will fight desperately, often repelling an attack from large beasts of prey. But in one of the narrow sylvan shelters to which they retreat after a night of active foraging, they are taken at a disadvantage, and fall an easy prey. The Mexicans and their light-footed Indian allies track the animals to their place of repose. Some of the hunting party are stationed near the entrance to the nest, while another with a gun remains at a little distance to pick off any animals that

FIG. 2.—RUNNER FASTENED.

may escape the machetes and spears of the first. A resounding blow upon the hollow log soon brings out its inmates to repel the attack. A brief and bloody struggle ensues, which leaves the ground strewn with the slaughtered peccaries, as vividly represented in our engraving (by Cary) on the first page of this number. The caudal gland is promptly removed from each animal, or it will soon taint the flesh with its unpleasant secretion. The trophies of a successful raid of this kind go far to compensate for the havoc wrought by the animals when living.

BREAKING TIMBER LAND.

During the past fifteen years I have helped to clear off and break nearly one hundred acres of heavily timbered land. I have sown the land down in timothy, red clover, blue-grass, and orchard grass, and pastured it for four or five years before breaking it. I keep the sprouts down, and by the time mentioned the roots have mostly rotted and many of the stumps can be pulled out with the plow. When the ground is to be plowed at once, the work is more difficult and cannot be too well done. Every root in the way of the plow should be taken out and all the smaller stumps. I do none of this work until I put the plow in the ground. A strong plow and a steady team are essential. I fasten an upright cutter to the plow, and with it can cut all but the largest roots. It also aids greatly where there are patches of hazel brush. The shape of the cutter and its position on the plow are shown in the illustration. The cutter is held to the share by a bolt passing through both, having a smooth head sunk into the cutter, a thread and bolt being on the other end. It is better to have the cutter back from the point of the plow than at it, for two reasons: The point running under the root bends it and the tension helps the cutter in getting through, and you are not so apt to run against a big root unawares, as the point running under it increases the draft and warns the team and you. The blade of the cutter should be three inches wide and half an inch thick at the back, and of tough steel. When it gets dull, take it off and grind it. It is held to the beam by a clevis passing over it and around the beam. I carry an ax with me, making a rest for it on the beam. With it I cut roots too strong for my team and



PLOW FOR BREAKING TIMBER LAND.

the cutter. By pulling the plow back the root is left exposed. I do not grub any until I begin plowing, because I can plow close up to a small stump and by cutting from that side can so loosen it that the plow will take it out; this saves moving the dirt with a mattock. The most troublesome stumps are those sending out many side roots, such as the red elm. Those having heart roots can be closely reached with the plow, and if the heart root is cut a little below the level of the furrow the stump is easily pulled out and bothers no more. When I have plowed the land none but the larger stumps are left, and there are no roots projecting beyond the stumps. The stumps and roots are hauled off, the former to close hollows, the latter for fuel. A team used in breaking such ground soon become accustomed to the work, and will go cautiously as they approach a stump.

J. M. S.

SHOES FOR MOVING HARROWS.

Our illustrations, which were engraved from sketches and description furnished by C. M. Emery, of Knox Co., Tenn., show a device to facilitate moving the Acme harrow or similar implements. It consists of two runners of oak plank, each six inches wide and two and a half feet long, shaped as shown in figure 1. A piece of similar plank, eight inches long, is secured to the upper front edge of each runner, and another, twelve inches long, is fitted crosswise into the notch and fastened there, as shown in figure 2. A white oak pin is also driven into the hole directly in front of the cross-piece. These pieces and pins may be made of the wood which is cut off in shaping the runners. They are used by placing one under each end of the Acme harrow, having first dropped the lifting lever into the lowest notch to raise the teeth.

A DAKOTA FLAIL.

The old hand flail, as an implement for general purposes, is a thing of the past. The rhythmical thumpings which formerly sounded from every barn throughout the short winter days are silenced, and the work of threshing is more cheaply performed by steam-driven machinery. Nevertheless there are still odd jobs on every farm which can only be done with a hand flail. Small lots of peas, beans, garden seeds and buckwheat can be threshed out by hand at intervals of other work. Mr. R. G. Newton, of Dakota, furnishes a drawing of a home-made flail, from which our illus-

DAKOTA FLAIL.

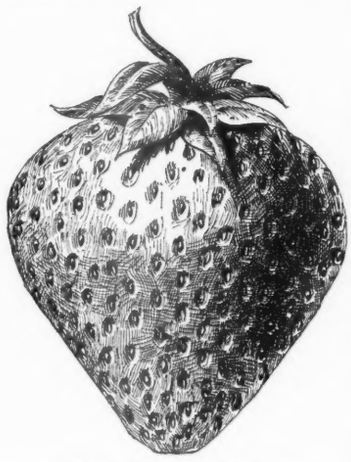
tration was engraved. The stale, *A*, is made from a fork handle, or similar piece of tough hard wood, four feet long. The swingle, *B*, is about three feet long and two inches thick, of hickory, elm or white oak. An iron lariat swivel is prepared by fitting a small block of hard wood into the larger eye. This is fastened to the end of the stale. A slot is cut by a saw and chisel in the end of the stale, the swivel fitted snugly into it, holes bored to correspond with the hole in the swivel, a rivet inserted and headed down, washers having first been set on each side. A stout leather string connects the swivel with the swingle and completes the work.

SOME DAIRY PROBLEMS.

JOHN GOULD, OHIO.

While here and there a dairyman has succeeded in solving for himself the problem how to keep cows profitably, the great mass of dairymen plod along and conduct their business by rules that were formulated in the infancy of dairying. They keep on milking a cow whose gross milk yield will fall below 3,500 pounds yearly; they milk her when dairy produce is lowest; feed her on expensive foods, without any knowledge of its influence upon the milk supply, and its quality, or its cost of production.

The first and most important problem to be decided is, What kind of cows shall the dairyman keep? Shall he keep a big, beefy cow, that makes 125 pounds of butter per year and gives milk about seven months of the twelve, or shall he keep a specific dairy cow of big performance, producing 275 to 300 pounds of butter per year. The food of each will practically be the same, but the profits of 300 pounds of butter over 125 are worth while to consider in contrast to the beefy carcass of an "old cow" that has been ten years maturing. No argument of beef or steer calves will change the figures, for it is the feed fed it after birth that determines the value of the ox. What that breed shall be is an open question, but it is sufficient to say that there are specific dairy breeds of great excellence; when once adopted they need to be bred in continuance of past lines. The male of the specific dairy type is of strong prepotency, and the grade heifer of a good native cow often surprises the owner by her excellence. The grade will be a most persistent milker, better than her mother, and if this same sire is once crossed upon his own get, the milking qualities will be intensified, and the dairy habit fairly established. The line of breeding should not be changed to other breeds, but males of the same breed and of noted families procured, and the third and fourth generations will usually exhibit all the traits and excellences of full bloods, and are to the average dairyman quite as satisfactory. Good breeding of dairy stock implies a thorough sifting out process of inferior animals. The dairyman must also learn what a dairy type is, and breed to this form, and discard the beefy type, with blocky bodies and well sprung ribs. He must bear in mind that the sire of a herd is possessed of a greater influence in molding excellence of milk performance than the dams, so that the sire should always be selected from a family of more than average performance, and then by keeping the breeding stock as closely as possible to a type of uniformity of build, and quality of product, a substantial progress will be made.



THE GANDY STRAWBERRY.

The dairyman must study the market demand for his products, whether these are butter, cheese, or milk, and keep cows adapted for that want. It would be financial suicide to sell Jersey and Guernsey milk to the city milkman, when twelve per cent of solids constitute "good" milk, or keep so-called cheese cows from which to make butter. A line of dairying must be decided upon, and held to, for frequent change in dairy methods will never bring reputation, nor very great prosperity.

Then the cow should be treated and cared for as a mother, and fed a mother's food, not the food of bullocks. This feeding and care should commence with the calf. The stunted calf that has been obliged to rob its bodily growth to keep from freezing, or spend its summer fighting the "gaunt wolf," has had its energies misdirected, and in after life it will rarely ever pay to try to make a profitable cow of it.

The calf that is raised for a dairy cow should be abundantly—not lavishly—fed on good grass, clover hay, oats, bran and other protein foods. Corn meal should be discarded. Milk-giving is a function separate and apart from beef making, and to first induce the beef habit by feeding fat-formers, like corn meal, is to train the heifer in that way, and at last, when a cow, and you wish to "feed her up," the extra food will go to four-cent beef, instead of thirty-cent butter, and a big loss is met with; for the food that is turned into butter is sold every day, and there is only one sale for the beef.

Our heifer calf should be well fed, well housed, and kept warm in the winter, for in a stable of good light and pure air, she will develop the kind of hardiness that dairy cows need, the oats and bran will give solid bone and strong muscle and nerve, and also

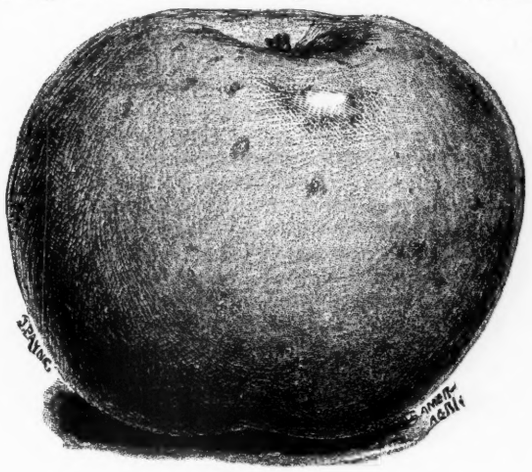


FIG. 1.—THE GRANGE APPLE.

build up the embryo life that she must otherwise rob herself of to supply, or leave incomplete. Then our heifer, if milked as long as possible the first year of her dairy life, generously fed to make good, rich blood, out of which to make good milk—for milk-giving is first blood secretion governed by nerve force—we shall, as a rule, find we have a profitable dairy cow. This cow should be retained as long as she profitably pays her keep, then sold as a "sausager" for what she will bring; for we hold that no man ever fattened an old dairy cow to a profit. Better by far put this food into a cow that does give milk, and get pay for food consumed.

THE GRANGE APPLE.

This new apple was first brought into public notice by the Mullica Hill Grange, of Gloucester County, N. J. At the meeting of the American Pomological Society, held in Boston last September, it was favorably noticed by the Native Fruit Committee. In general appearance and size the fruit resembles the Rhode Island Greening, being large, nearly round, and slightly flattened at the ends; when fully ripe its color is greenish yellow, with a few red dots, and a blush on the sunny side. Its flesh is fine grained and of a mild, subacid flavor, season from December to March. The trees make a strong, vigorous growth and, with proper care, bear abundant crops annually.

THE GANDY STRAWBERRY.

Our illustration shows an average specimen of a variety of recent introduction, which has so far fully come up to promises. It

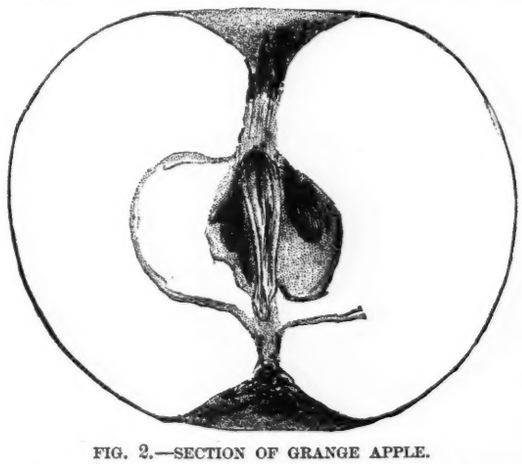


FIG. 2.—SECTION OF GRANGE APPLE.

is a cross between Jersey Queen and Glendale, and combines all the good qualities of both parents, but its principal value consists in its

late ripening. The berries are uniformly large, conical, bright crimson, very showy, and of solid consistency; quality very good. The plant has large, healthy foliage, is a vigorous grower and a prolific bearer. From one year's experience with this variety we became very favorably impressed with its various good qualities for home use as well as for marketing.

POINTS FROM AN EXPERT FRUIT EVAPORATOR.

S. W. LOVELL, NEW YORK.

Fruit evaporating is a business requiring careful study and experience to be successful, as I have found after a number of years of faithful study. Our grafted varieties of apples yield from six to eight pounds of the evaporated fruit to each bushel of fifty pounds of green apples, according to the care and management the fruit gets during its preparation and drying. The best paring machines are none too good, and until 1886, there was not a worthy one to be had. But now several very practical machines are in use. I prefer machines that pare, core and slice at the same time, though I used to think a separate slicer necessary to get the greatest production. But I can now get eight pounds to the bushel by the use of the combined Tabor machine. Two girls with this machine can prepare thirty bushels of apples in ten hours, and they work for sixty cents per day each. To save fruit, paring machines must have the best of care. The knife guards, knives and coring tubes should always be ready for exchange, and a machine without interchangeable parts is practically worthless.

A popular sentiment is rising against the use of so much sulphur in bleaching fruit. I am glad to see it, but bleaching of some kind will be followed for some time yet. Apples and peaches should be introduced to the bleach as soon as pared, as after that a good color cannot be had, as they turn red by delay. A good way to preserve the fruit for the bleacher is to run it as soon as pared into a vat filled with water made brackish with salt, being careful not to add too much salt, as then the fruit, when dried, would gather moisture and damage its marketing quality.

Spread the fruit for drying on trays made of No. 5 galvanized wire cloth. I prefer steam heat for drying, because by it much more work can be done by one fire than by the furnace system, and insurance rates are lower. Care must be taken not to leave the fruit in the evaporator so long as to turn it brown. I take out the fruit rather early and spread it about ten inches deep on a curing floor, where it lies for ten days or two weeks, and is shoveled over once or twice before packing. In this way one can take fruit from the dryer while it is still quite damp, saving fuel and increasing the working capacity of the machine. We also get a more marketable quality of fruit, for the color will be better. But I am not advising packing fruit before it is thoroughly dried, which is bound to cause shrinkage; and so much of this has been done (especially on bleached fruit, that will keep in quite a damp condition) that commission merchants have got into a notion that all packages of evaporated fruits must be docked for shrinkage.

No machine is yet made that will do good work on peaches ripe enough to be of rich flavor, so they must be prepared by hand. They must be bleached like apples and spread on trays with the flat side next the wire, to keep the pieces in nice shape. Peaches are packed in twenty-five pound boxes, and a nice facing is laid next the cover. Considerable care is necessary in drying blackberries and black raspberries, particularly to see that they don't dry too much. I hardly dry them enough, but spread them in my curing room six inches deep and shovel them over a few times until they are thoroughly dried; four pounds of the black raspberries will make one pound of dried fruit, and a bushel of peaches will produce eight to ten pounds of the dried article.

Evaporated apples in ring slices are packed for Eastern markets in boxes holding fifty pounds. Two pieces of paper are placed in the boxes next the cover and laid so that they will fold back each way from the center, lapping down on the side of the box, and then the ring slices are laid in rows on the paper, with one-half lapping so as to make a nice facing; then the box is filled from the bottom, and if the fruit is thoroughly dried a press is necessary to get fifty pounds into the boxes commonly used.

So much depends upon proper management and experience that it is difficult to give accurate estimates about the business. One may make a failure out of the same run that another would turn to a profit. But I will make two estimates. The first is on a business of drying three hundred bushels of apples per day of twenty-four hours, reckoning at the low rates we may expect for this season, as the crop is general:

300 Bushels of apples at ten cents per bushel.	$30.00
28 Girls to run the paring machines, at sixty cents per day	16.80
2 Men to handle apples, at $1.25 per day	2.50
2 Men to attend the evaporator, at $1.25	2.50
2 Boys to attend the bleaching, at seventy-five cents . .	1.50
2 Men to attend to the fires	2.50
Fuel	4.50
Incidental expenses	5.00
Total expenses	64.50
Credit by 1800 lbs. dried fruit at six cents per lb. .	108.00
Net profit per day.	$33.70

On an evaporator of seventy-five bushels' capacity in twenty-four hours, such as the large fruit grower wants who handles his own crop, the showing should be like this:

75 Bushels of apples at ten cents	$7.50
5 Girls day and evening at seventy-five cents	3.75
2 Men at $1.25	2.50
Fuel and incidental expenses	4.00
Total expenses	17.75
Credit by 450 lbs. dried fruit at six cents	27.00
Net profit per day	$9.25

These figures allow only six pounds of dried fruit to the bushel of green apples, whereas good management may increase the proportion. The estimates for labor are very close, but from these two statements, fruit growers can readily figure out whether they can make any money in evaporating or not. My statements are made on the supposition that the whole business is managed closely, and that apples are not allowed to rot or machines to take care of themselves; nor have I allowed for the waste. Drying waste does not pay at the present prices. But if you use steam, you can make the waste into vinegar stock worth about $3 a barrel, if the buyer furnishes the barrels. After the pomace has lain about six days, it can be pressed again, and gives about quarter as much juice as at first, after which the pomace may be burned for fuel in any boiler furnace with a good draft, especially if a little coal or wood is added.

I do not think the many little cook-stove evaporating devices can be recommended at the present prices, as sun-dried fruit can be prepared quite as rapidly and brings very nearly as much as evaporated. Well-organized evaporating houses are the only reliable means of gaining a profit at this business, and one must be very sure of being right before going ahead. Our Western New York markets are now offering six cents per pound for evaporated apples of prime quality at the evaporator, in sacks furnished by the buyer. This is as good as eight cents in New York City, as there is no packing, freights or commission.

A DANGEROUS FOE—SELFISHNESS.

Selfishness is a more dangerous foe to family concord than even irritability. It takes among various forms, those of self-indulgence, self-assertion, love of domination, jealousy. Parents cannot be too quick to see tendencies to these vices in their children, and to apply such counter influences as shall prevent the destruction of domestic harmony. Many children by parental indulgence are made selfish and exacting that under a different regimen might develop self-sacrifice, generosity, and nobility of disposition. Indulging a child in his whims, his moods, his morbid desires, is not the way to make him a ministrant to the harmony of the family or a valuable member of the community when he becomes an adult. There are some texts that deserve to be framed and hung on the walls of every household and to be wrought into the web and woof of the family life. Among these are, "A soft answer turneth away wrath;" "No one should do what all may not do;" "She openeth her mouth with wisdom and in her tongue is the law of kindness;" "Do to others as ye would have them do to you."

Glass Jars Better than Tins for Canning.—Fruit jellies are very expensive, both to the pocket and health. But few families provide enough canned fruits. If put up in the best manner in glass, the canned fruits give the best possible result, supplying the family the year through with the healthful fruits in their natural flavors and lusciousness. The ordinary "tin" cans are leaden more than tin, corrode, and form poisonous compounds with nearly all fruits, and are not to be recommended for storing large supplies for family use. Colored, self-sealing glass jars ought to be made cheap enough so that no family need ever use a tin can. If glass were more used, they soon would be cheap enough. T. V. MUNSON, Texas.

THE CATTLE OF NORTHERN ITALY.

The cattle of eastern and southern Europe, from the scrawny beasts of the eastern steppes to the long-horned Sicilians and Andalusians, are mostly of very inferior quality; but there are notable exceptions, among which are two races in northern Italy, of which our illustrations show typical specimens. The bull, shown in figure 1, is of the Chianina breed, which has for centuries been reared in the rich Val di Chiana, lying among the Tuscan hills. These cattle are white (except the black muzzle and tip of the tail), with fine heads, short waxy horns, good quarters and moderately small bones. They mature early, fatten easily, and at the age of three years attain a maximum weight of sixteen hundred pounds for cows and two thousand pounds for bullocks. Their beef is finely marbled and of excellent quality. The oxen are largely employed for the yoke, being docile, strong and intelligent. The Chianina is not a dairy breed, the yield of milk being quite limited. In general characteristics they resemble the Herefords more than any other breed of British cattle. The cow represented in figure 2 is of the Pianura breed of Piedmont, which is adapted to dairying rather than beef production. Both these and the white Tuscan cattle are supposed to have descended from the ancient wild *Bos primogenius* which once roamed the German forests, and of which the Podolian race are the nearest modern representatives. The soft air and rich pastures of the Val di Chiana, together with care and generous winter feeding, have at length developed the beefy Chianina, while in the more rugged region of Piedmont the active and hardy Pianura breed has descended from the common stock. The latter are whitish gray in color, with fine waxy horns, small bones, good udders and milk veins, and a general contour not unlike the Guernseys. They mature slowly, are hardy, active, and easily kept.

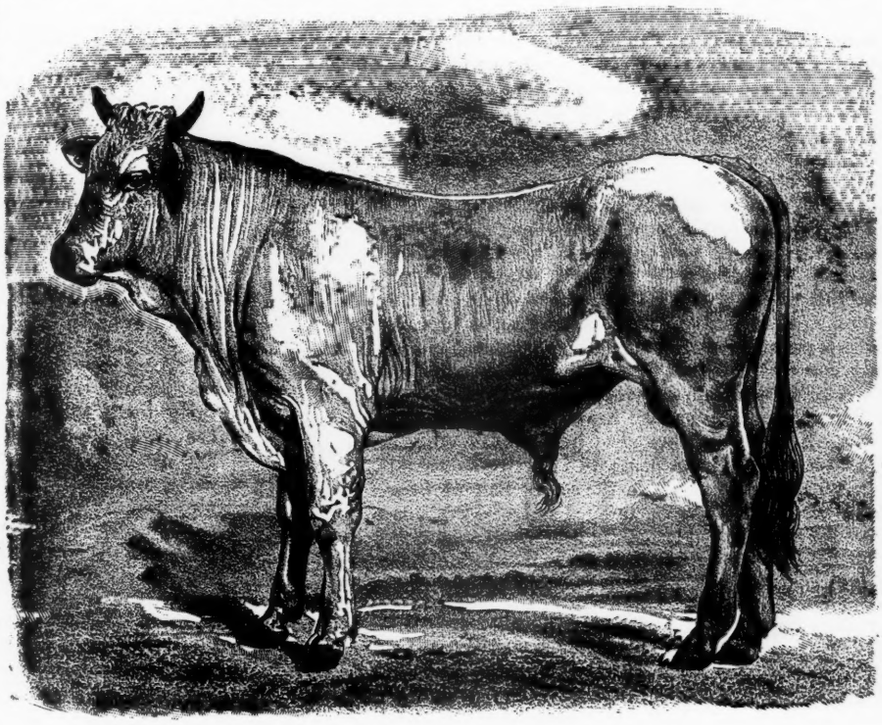


FIG. 1.—TYPICAL CHIANINA BULL.

Harvest Luck.—Some farmers are the most lucky people in the world. They cut their grain and get it in the barn, though often before the last load is thrown up under the peak a big rain comes on. But how enjoyable a heavy rain must look to the farmer who can see his last load of grain in the barn! To be sure, he has watched the weather, his implements were all repaired, ready for the harvest, and he did nothing but harvest when the time came. He worked his brain as well as his muscles, and that is why he seems to be a very lucky man.

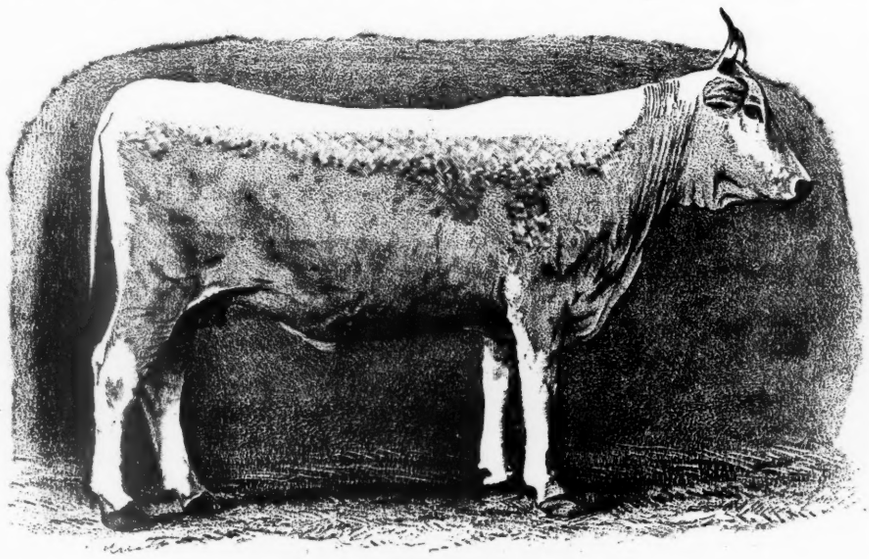


FIG. 2.—TYPICAL PIEDMONT COW.

The Pecan Nut in Texas.—In this locality the pecan tree is one of our most valuable forest trees. The timber is not put to use yet, for there are no manufactories here. The trees grow along all the water courses, on the low lands, and every other year produce a heavy yield of fine nuts. This crop is harvested at slight expense, no cultivation being necessary, and it is said that no tree returns greater profit to the amount of ground it occupies than the pecan. The crop was very heavy last year, and a great deal of money was realized in gathering the nuts. The trees attain great size, and yield enormously. When planted from the seed they begin to yield at from nine to ten years old. But little growth is made the first two years, but after that their growth is very rapid. Of late, considerable attention has been given to them in Texas, and steps have been taken to preserve this valuable nut tree. Some have planted the seed along their bottom lands. G. W. JENKS, Texas.

A Stable Floor.—I know a thoughtless man who allows his horse to stand on a plank floor which is so worn under the hind feet that it is liable to give way at any time, while into this cavity liquid collects for the white horse to lie down in. Well, you should see the horse in the morning! How many times would you have to clean that naturally white animal before you put in a new floor? The man has money to have it done every week if he cared to. He smokes up a floor in cigars twice a month. ORVICE SISSON.

Always Grade Fruit as to quality, ripeness and size. Require absolute honesty and neatness in the packing. Always distinctly and neatly mark each package with your name or trade mark. Second grade fruit, if sold at all, should be sold as such and by itself. If we follow this course the disposal of the surplus fruit will be in general a matter of less moment than we have hitherto thought. E. GALE, Riley Co., Kan.

A Grand Display.—The show of agricultural implements at the great fair of the Royal Agricultural Society at Nottingham, England, in June, exceeded anything ever seen in America for extent. The implements occupied two miles (running measure) of shedding.

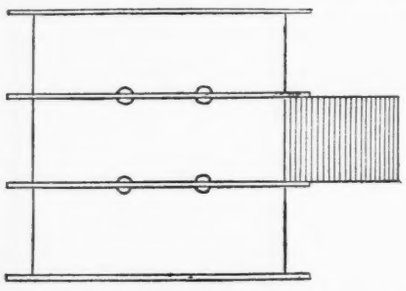
ONION RAISING IN DAKOTA.

R. GOODING NEWTON, FAULK CO., DAK.

There is no part of the United States where common varieties of garden truck flourish with greater success than in Dakota. Onions are a particularly good crop. The Red Wethersfield is the standard, with a few Early Red Globe for early green onions. To test the seed for vitality count out one hundred, put them in a cup and pour hot water on them. After they stand a few minutes pour them out on a piece of flannel folded several times, double it over them, and set in a warm place near the fire. They will germinate in two or three days and show the per cent of live seed. Having prepared the ground, draw a garden line across one side of the bed. Have a good seed drill (I use the Planet, Jr., No. 2), open the side according to quality of seed, set the furrowing plow so that the seed will be covered about a quarter of an inch, and the marker to make the rows about fifteen inches apart. I use about two pounds of *good* seed to an acre and find it enough. If the ground is clean the onions will be two or three inches high before the weeds get started. Then take the Planet, Jr., Double-wheeled Cultivator, set the pair of long hoes, with bent ends in, about an inch apart, and run it so as to straddle the row, pushing it forward a foot or so; raise it clear of the ground and then go ahead again. A little practice will make perfect. In a few days I remove the hoes, putting the bent ends outside so that the other ends will just lap, and run it up and down between the rows. As soon as the weeds are large enough to pull, the rows must be hand-weeded, generally twice in a season, the cultivator being used as often as possible.

When the bulbs attain the size of half or three-fourths of an inch across they can be thinned out, and the surplus made into bunches of eight or ten each, which sell readily for five cents a bunch. One will be surprised at the number of bunches that can be pulled, and still leave plenty on the ground to mature. When fully grown they are pulled, half a dozen rows thrown into one and left to ripen and dry out. They can then be drawn in a box on a stone-boat and put under a waterproof shed, and placed in piles two or three feet deep. Here the tops may be pulled off and the onions carefully sorted, placing all the scullions in one pile, all onions an inch and a quarter or less in another, the marketable onions in a third, and selecting for seed as many of the finest in shape, color, etc., as may be needed. I raised last year a pound and a quarter of seed from half a bushel of selected onions. This furnished the seed sown last spring on three-fourths of an acre of land.

A field of half an acre or more devoted to onions will produce a crop requiring a pit or cave to store them through the winter. Such a pit may be ten feet square and six feet deep. Four posts are set; they are preferably of red cedar, six inches in diameter at the large end. Two joists four by six inches and twelve feet long are set edgewise upon the tops of the posts, the joists projecting one foot at each end beyond the bounds of the excavation. Two pieces, two by four inches, twelve feet long, are laid flatwise flush with the



PLAN OF ONION PIT.

sides of the pit and parallel with the others. The pit is then covered with two thicknesses of inch boards, laid so as to "break joints," with tar paper between and the whole firmly nailed to the joists. This is then covered with earth to the depth of eighteen inches well packed down. A door-frame and door are fitted in at the foot of the stairs and an outer trap door is set at an angle of about forty degrees. The whole is well banked up with earth, and all crevices around the door are closed with mortar to keep out mice. To keep well through winter, onions should remain frozen. The doors are left open during the daytime until severe weather comes and the onions are all frozen solid, when the house is shut up, keeping them in that condition. Such a pit can be also used for storing parsnips and vegetable oysters, both of which must be taken up in the fall, as they will not stand the winter in Dakota. The former sell readily for seventy-five cents to a dollar a bushel during winter and spring.

PROTECTING THE BANKS OF IRRIGATION CANALS.

PROF. A. E. BLOUNT, COLORADO.

In an arid section like Colorado, where all crops are raised by the artificial application of water, it is necessary to have canals to take the water from the natural water courses out into the adjoining territory, as high up as the level of the streams will admit, and from these canals, ditches and laterals are constructed to distribute the water upon the farms lying under them. While water is the great source of crop-raising, and while the ditches are, as well, a great source of success in agriculture, they are often a source of trouble and expense in disseminating noxious weed seeds in the water as it is spread out upon the land. Laws have been enacted to regulate this evil, but like many others they have become inoperative and the weeds grow on more rampant than ever. Not only do they find lodgment upon our land but on the ditch banks to such an extent that the water is clogged and irrigation greatly retarded. "What shall be sown upon the ditches to remedy these evils," asks a subscriber to the AMERICAN AGRICULTURIST, from Cañon City, Colorado, and "what can be put there to make the banks strong?"

There is no shrub, weed or wild grass that will answer the purpose and no tame grass or plant that will not fall over into and clog the water in the ditches. But the best to sow and those that will come nearest making the banks strong, and keep out of the water, and at the same time become a source of utility, are common red clover and timothy. They make a most luxuriant growth, two and sometimes three cuttings a year, and produce much more hay than on any other parts of the farm. The only expense and trouble attending the cultivation of these on the ditch banks are the mowing and raking by hand. Not only are they a source of profit and utility in keeping the ditches in good order but they keep out all weeds and noxious weed seeds. Red top, blue grass, alfalfa and other tame grasses and clovers grow too rank and rapidly for this purpose. Timothy, being stiff and coarse (and so with orchard grass) holds the clover up, and both make an excellent bank, fine crops, and are attended with as little trouble as any others—much less in fact than any, so far as they have been tested. There seems to be no "small grass" or short growing variety, as the correspondent wishes, that will remain short when brought in contact with a ditch, except perhaps the native buffalo grass (*Buchloe dactyloides*), which by the way will not flourish with or too near water.

GRAPE CULTURE IN CANADA.

WILLIAM MEAD PATTISON, PROVINCE OF QUEBEC.

An increasing interest has been taken for some years back in the cultivation of the grape in the southern part of this Province. The localities found best adapted to it are in the valleys of the Ottawa, St. Lawrence and Richelieu Rivers, which possess a calcareous shaly soil of early alluvial formation. As the waters of the three great rivers keep off early and late frosts, the meteorological records of these sections compare favorably with Central New York and the Hudson River Valley, while the dryer atmosphere, free in a great measure from fogs and humidity in summer, exempts the vine from its formidable enemy, mildew. On localities of suitable altitude this, under proper culture, is unknown, and many varieties subject to this scourge further south have shown no tendency to it here. Grapes cannot be raised here and brought to early maturity without proper regard to fall and summer pruning and winter protection. These requisites involve so large an outlay of labor, that in a commercial point of view we can scarcely compete with southern grape growers. The position of Clarenceville, on a peninsula extending into Lake Champlain, with its waters on the east and the noble Richelieu River, its outlet, on the west, has been found an exceptionally favorable locality for this latitude. It lies at an altitude of some two hundred feet above these waters and is never lacking in free circulation of air at all seasons. Damaging frosts rarely come later than the middle of May; in the fall they average about the 14th of October. Some situations on the Ottawa River, at Montreal and Abbotsford, are very little behind in this respect. On my experimental grounds at Clarenceville, of over one hundred and forty varieties that have been on trial more than one hundred are still cultivated with more or less success; nearly all the more promising are annually planted as the failures are discarded. Propagators are yearly putting out new grapes, yet not one in

twenty, after years of patient trial, may be said to equal the old standards, or one in forty surpass any of them.

ASSORTING FRUIT.

C. B. ROCKWELL, ILLINOIS.

Pick apples at the right time, assorting them as you pick, and put all the sound ones in bushel boxes. Take these boxes to some central and convenient place for packing in good clean barrels. Make

ASSORTING TABLE.

a table say six or eight feet long and three feet wide at one end, and narrowed to eight or ten inches wide at the other. Place boards six inches wide around the top, as shown in the engraving. Have the table high enough so that an apple barrel will just go under the narrow end. Make the other end of the table four inches higher, so that the apples will gently roll to the end toward the barrel. Empty the bushel boxes in this barrel, and you can see all the imperfect fruit, which can be readily picked out and the good fruit placed carefully in the barrel. In this way assorting can be done very rapidly. Proper assorting of fruit has been talked and written about for years, yet many fruit growers will not learn that the practice is money in their pockets. Certainly it does not pay to put a peck of small apples in a barrel of larger ones. They do not measure any more and only lower the price upon the whole product. If possible, select a good dealer in fruit and sell to him. If you can guarantee your fruit, you will have no trouble in selling. I make all my small sound apples into cider, using a power press with a capacity of eighty barrels per day. Adding three pounds of grapes to each bushel of apples improves the quality of the cider. Everything is kept sweet and clean.

A CONVENIENT PIGGERY.

We give herewith illustrations of a piggery, twenty by thirty feet, divided into four distinct sets of compartments. Figure 1 is an inside view, with a portion of the roof removed to show the interior of the passage which extends lengthwise through the center. This passage or hall, as will be seen by figure 2, is four feet wide and thirty feet long, closed at each end by a gate. Spouts opening into it communicate with the feed-troughs, and a gate opens into it from each pen. Beneath the roof are lofts for the storage of grain and other feed, to which access is had by doors hinged

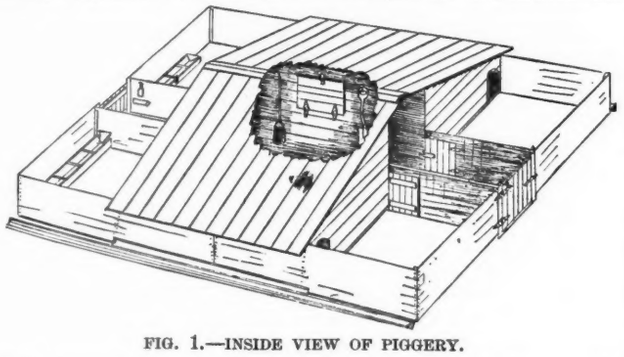


FIG. 1.—INSIDE VIEW OF PIGGERY.

on the lower side. In the covered portion of the hallway are also convenient hooks upon which to hang small tools. The roof extends over a section of fourteen feet, in which are situated the sleeping apartments, each seven by eight feet. The sides are covered with horizontal boards. Between the lower one and the plank floor is left a space an inch wide for drainage, which is caught in a trough extending along each side, directly under the edge of the flooring. Under the lower end of each trough is an old hogshead sunk in the ground for the storage of the liquid manure. A gate opens from one of the open pens into a yard. Such a structure is particularly well adapted for breeding sows and their young.

TIGHTENING FENCE WIRE.

A correspondent writes from Illinois, that after trying the methods he had seen recommended for drawing wire for fence—pulling it taut with a team or by winding it around the hub of a wagon wheel, also tightening short lengths with a lever—he was successful with the device illustrated herewith. He made a cylinder twelve inches long and nine inches in diameter, from an oak log, leaving axles at the ends. In this cylinder, near one end, he bored holes to receive the ends of stout levers. The three additional pieces may

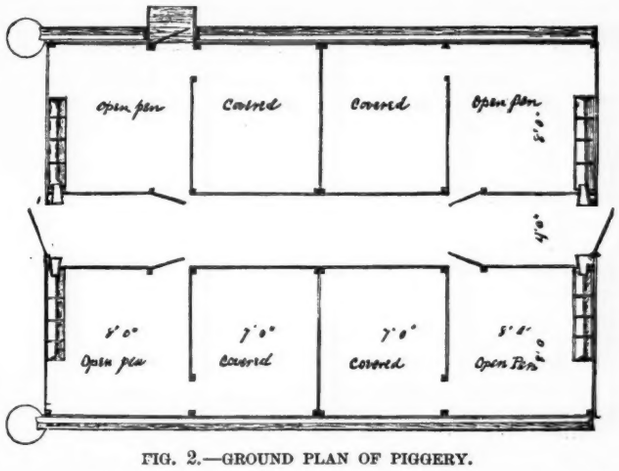
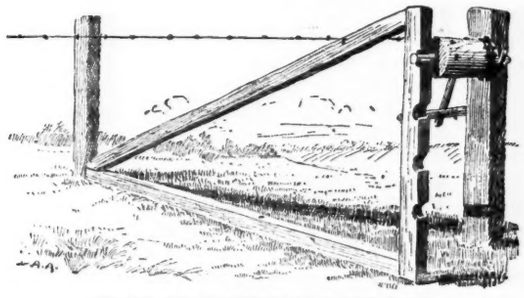


FIG. 2.—GROUND PLAN OF PIGGERY.

be fastened together, or not, as the tighter the wires are drawn the faster they will be held in place. The horizontal piece reaches from post to post, eight feet; the upright is six feet long, and the diagonal brace ten feet. The two are set against the post at its base. The cylinder must be a tough piece six by two inches, as the places cut to receive the axle weaken it. The axle against the post will be held in place by a spike driven in not farther than an inch. The end of the wire is wrapped around the cylinder and by turning the cylinder



DEVICE FOR TIGHTENING FENCE WIRE.

with the levers it is drawn tight; then the lever is kept from turning by fitting a stick in between the lever, the upright and the post. When the top wire is securely stapled to its post, the cylinder is moved down into the second notch.

Taming Prairie Sod.—In all situations which are adapted to the growth of the so-called "tame grasses" they may be made to supplant the wild growth without breaking the prairie sod. The seed of blue grass, timothy, or any variety desired may be sown directly upon the prairie sod. The wild growth will protect the new from the sun, winds and beating rains until it becomes established. In a few years the cultivated grasses will run out the indigenous ones, making a dense, thrifty sod. If the prairie has been used for pasturing cattle, it is so much the better. A good time for this is in September, before the autumn rains, or early in spring, before the frost is out of the ground. The latter is the time to sow clover. E. Z. ERNST, Kansas.

THE NEW ACT RELATING TO THE PUBLIC LANDS.

S. M. STOCKSLAGER, COMMISSIONER OF GENERAL LAND OFFICE.

There is now pending in Congress a bill entitled, "An Act to secure to actual settlers the public lands adapted to agriculture, to protect the forests on the public domain, and for other purposes."

This bill appears to have been carefully elaborated with the view to embody therein all the provisions of existing legislation for the disposal of the public lands deemed worthy of being perpetuated, with such additions and modifications as experience and reflection have suggested. The different statutes bearing on this subject were enacted from time to time by Congress as attention was directed to the needs of the people relating to the various descriptions or classes of lands constituting the public domain, without much regard to the relations of the enactments to one another, to the coherence of the parts, or the methodical adjustment thereof into a harmonious system. The pending bill proposes to classify the public lands according to their several characteristics or conditions as agricultural, timber, mineral, desert, and reserved, and to permit of their being disposed of according to its provisions and in no other manner, repealing all conflicting statutes or parts of statutes.

The pre-emption laws, originating early in the century, and continued with modifications to the present time, it proposes to do away with, and to retain the homestead system, originating in the act of May 20, 1862, as the sole method of disposing of the agricultural public lands, eliminating therefrom, however, the commutation or pre-emption feature of the eighth section of that act, since embodied in section 2301 of the Revised Statutes of the United States. In consequence of this change, should the bill become a law, it will not be practicable for the settler to purchase the land settled upon by him, or otherwise to acquire title than by actual and continuous residence thereon, with cultivation for a period beginning within six months from date of entry and continuing for five years from that date. The practice of offering the public lands in masses for sale to the highest bidder, and of holding such as remain unsold for entry thereafter at ordinary private sale for cash, which succeeded what was known as the credit system of previous laws, and has come down from 1820, is to be discontinued, so that none of the agricultural lands will be subject to sale, the bill being designed as its title says "to secure to actual settlers the public lands adapted to agriculture." This bill, while abolishing the allowing of pre-emption sales and public and private sales of agricultural lands, also abolishes the timber culture laws by which persons were permitted to acquire title to 160 acres or less of agricultural lands on the condition of cultivating a portion thereof in trees. This also is in pursuance of the purpose of securing to actual settlers the public lands adapted to agriculture.

These are the more important changes proposed in existing statutes. With regard to lands unfit for cultivation and chiefly valuable for timber, the statute of June 3, 1878, of local application, by which in California, Oregon, Nevada, and Washington Territory, parties were enabled to purchase such lands in quantities not exceeding 160 acres, is to be abolished, and general provision is made for ascertaining and setting apart tracts containing timber, and for the appraisement and sale of the timber to the highest bidder, but at not less than the appraised value thereof, the title to the land to be retained by the United States, and the timber to be removed by the purchaser within five years from the date of purchase. In connection with this subject, there is a provision, new in the land system, by which the President may set apart and have protected from waste or injury any part of the public lands, bearing forests, as public reservations.

With regard to the class of mineral lands, the existing laws are permitted to remain substantially unchanged, with the exception, in relation to all lands hereafter sold, that the United States expressly reserves from sale all coal deposits therein, but allowing the purchaser to mine and dispose of the coal until such time as Congress shall, by general law, take the control of any such coal deposits, for the purpose only of protecting the same from monopoly and securing the product thereof at reasonable prices to the people; which is to that extent a change in the existing laws, by which absolute title to the coal in the public lands may be obtained by purchase.

The provisions of the existing law for the sale of desert lands, allowing the sale thereof in certain States and Territories to the extent of one section or 640 acres at $1.25 per acre or $2.50 per acre, as the case may be (Act of March 3, 1877), are so modified as to limit the quantity that may be entered by any one person to 320 acres, and also substituting certain fees and twenty-five cents per acre for the price mentioned, and to restrict entries to bona fide residents of the State or Territory in which the land is situate. It is required to be shown before patent issues that agricultural products of commercial value have been raised by irrigation upon at least one-eighth of the entered land.

The bill provides for the survey and disposal of abandoned reservations at public sale for cash, according to existing laws, with the provision, however, that the Secretary of the Interior may, in his discretion, have such lands disposed of as homesteads to actual settlers, or any portions thereof within the limits of an incorporated city may be reserved by order of the President for public purposes.

Among the provisions of a general nature contained in the bill is one dedicating for public highways a strip of land of the width of two rods on each side of the section lines on the public lands, with the qualification that the same may be opened or vacated in the manner provided for establishing public roads by the State or Territorial legislature; and that until opened, or if opened and afterwards vacated, it shall be considered a part of said sections respectively, and shall pass to and vest in the owners of said sections, subject only to the right of highway as aforesaid. This provision is expected to have an important influence against the tendency to the acquisition of large bodies of land in the hands of a few persons, and in favor of "small holdings," in the new States and Territories to be affected thereby.

Another such provision gives an important assistance to settlers on small tracts under the public land laws, in defending their titles against land grant corporations, or persons holding grants from foreign governments, or claimants under such corporations or persons, by permitting the settlers in such cases to raise and interpose as a defence any mistake, error or mistaken construction of an act of Congress by the Interior or Executive Department, in making certification or patent of said land, and to raise any question which the United States might raise, and with the same effect as if raised by the Attorney-General in a suit in equity to set aside such patent or certificate.

This important bill is understood to have originated with the Hon. Mr. Holman, whose position as Chairman of the House Committee on Public Lands is a guarantee, if any were needed, of his eminent fitness for such a duty. In its main feature it is in harmony with the recommendations of the General Land Office and the Interior Department. This is especially true as to the repeal of the Pre-emption, Timber Culture and Stone and Timber Land Acts, as well as the Desert Land Act and the commutation feature of the Homestead Law; the repeal of all which has been repeatedly urged by the General Land Office, upon the grounds that great frauds were being perpetrated under each.

BRITISH DAIRY INTERESTS.

B. T. HUTCHINS, ENGLAND.

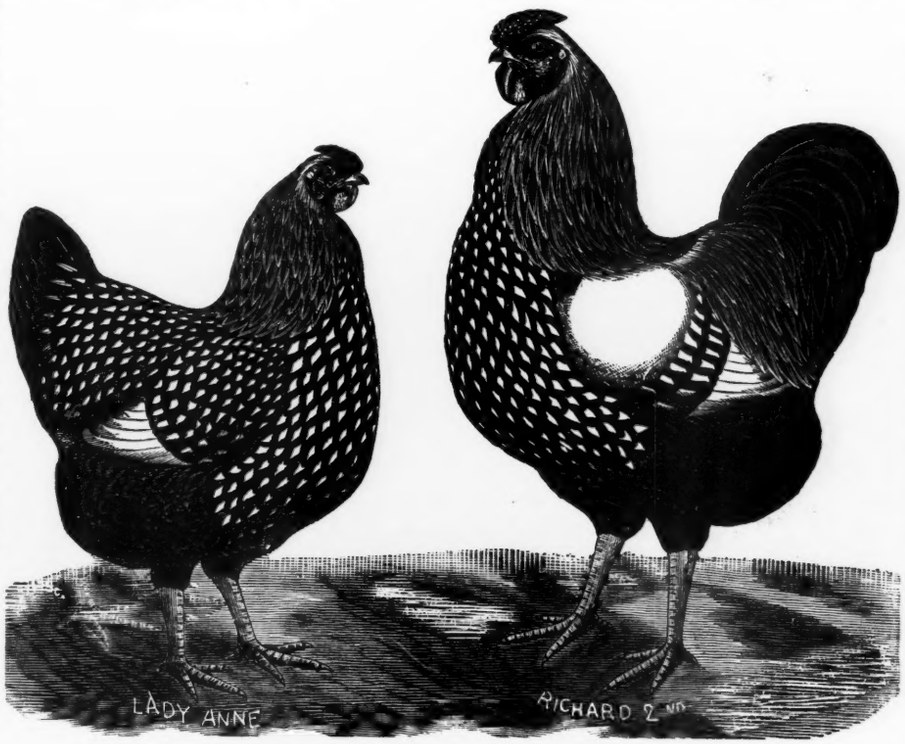
One of the most important and interesting meetings of an agricultural character, that annually takes place in England, is that of the British Dairy Farmers' Association. The last meeting was held in Ipswich. It was a very large gathering of nobility, gentry and tenant farmers, and presided over by the Marquis of Bristol. His address was full of interest, but space will only permit of a few statistics of practical value. He said that over £15,000,000 [$75,000,000] a year were annually paid by British consumers to foreigners for butter and cheese, every pound of which ought to be produced by English farmers. He particularly alluded to the great quantity of cheese that America exported to British soil. But there is good reason for this large exportation. It is because American cheese is rapidly coming into English favor. The writer has been in every part of England, and wherever he has gone he finds this fact true, and no freer acknowledgment is made than by the cheese-makers themselves. So plain is it, that a large number of them have relinquished that part of dairy farming.

In order to excite an interest in the revival of this work, many suggestions were offered,—among them, dairy schools, especially in the Suffolk and Norfolk districts, where the land is excellent, and the polled herds, the cows of which had always the reputation of being good dairy animals. It was recommended that a larger amount of food should be raised for dairy cows from arable land, and also a constant change in the dietary. Silos were strongly advocated. Autumn-sown rye was pronounced the best for silo preservation, and the earlier it was sown in autumn, the better would

it stand the winter, and the bulkier would be the crop in the spring. There was one statement made by one of the largest and most influential farmers (Mr. H. A. Howman), which, I am sure, will surprise many American dairymen. He spoke of thousand-headed kale as the most important of all arable dairy crops; and he makes no hay whatever on his large farm, for he considers that not only cows but cart horses do a great deal better without it. His management is very peculiar in selling off the whole of his cows, as soon as they begin to fail in their milk yields, and replacing them by fresh ones in full profit. Mr. Howman said that on one of his farms, where fifty cows were kept, the annual return of milk for the previous three years averaged 23,000 gallons, but after the change the return of milk exactly doubled itself. He put the matter in this light: If half the cows were changed every six months, the difference in the purchase and sale prices would be about £6 a head, the loss being £300; but on the credit side of the account would be the value of 23,000 gallons of milk, which, at sixpence per gallon, would amount to £575. These facts were most certainly fresh to the majority of the people present. Some of them accepted the statement with much favor, while a few took exceptions. The readers of the AMERICAN AGRICULTURIST can form their own opinions.

THE WYANDOTTE BREED OF FOWLS.

None of the American breeds of poultry have been more successful in achieving and maintaining their popularity than the Wyandottes. This comes in a large degree from their intrinsic good qualities and still more from the successive variations which have appeared among them. The original type was hailed as an acquisition, and attracted favorable attention from all sides. When they had become recognized as an established breed, the White Wyandottes appeared and created a decided flutter in poultry circles. Then came the Golden, to keep up the interest. With all their other qualities the Wyandottes seem to possess an uncommon power of variation. What the next departure will be can only be conjectured. The accompanying illustration shows a pair which took the first prize at the poultry show of 1887 in Madison Square Garden, New York. They were bred and are owned by Edward B. Thompson, of Dutchess Co., N. Y.



PAIR OF SILVER WYANDOTTES.

OUR CAGED PETS.

MICHAEL K. BOYER.

PLAIN DIET.—All cage birds should be allowed only a plain diet. It is the "extras" that make sick pets and discouraged women. Take, for instance, the seed-eating birds; they thrive all the better on plain canary seed, with a little millet and rape. The less hemp fed the better. Never feed sugar and cake; give very little green food. For an experiment, five years ago I purchased a canary and gave it nothing but plain canary seed, a little millet and rape; no greens, excepting occasionally a bit of sweet apple; no bird manna nor patent foods; a good supply of gravel, and cuttle fish all the time; fresh water every morning; about once a week a few rusty nails or a piece of copperas the size of a pea, put in the drinking water; and on warm days a bath. That bird has not been sick a day, and has been almost constantly in song. More birds are killed by kindness than by neglect.

THE EUROPEAN BLACKBIRD.—It is surprising that not more blackbirds are kept as pets. They are very hardy, natives of Europe, and thrive well in the United States. They are easily taught to do many cute things, and become attractive pets. The song of the blackbird is rich, and is a close imitation of the nightingale. They will sing ten months of the year when in captivity, and only four months when free. I have known them to sing several popular airs; their memory being good, they are readily instructed. Their diet consists of bread, meat, and such foods as come on the table. They will live as long as fifteen years, if carefully fed and attended to.

THE PARROT FAMILY is a large and interesting one. The gray parrot is a very good talker. Its color is an ash gray, with a tail of bright crimson. This is the bird that is said to live a century. The green parrot is larger, with a fine green plumage, the base of the bill bright red, blue cheeks, yellow on top of the head, while the wing coverts and quill feathers are a deep blue. This variety is exceedingly affectionate. There are a number of other breeds, but these comprise everything desired in a parrot. The paroquet is very small, with a long tail. It is the bantam of the family. Its graceful actions and pretty color have won for it quite an enviable position among our household pets. Then comes the cockatoo, with its crest of elegant feathers, which it raises or depresses at will. Of this variety the whites are the most popular. It is as large as an ordinary fowl, and exceedingly handsome, but outside of this beauty it has no talents, as it can rarely be taught to say anything.

DON'T HANDLE THE BIRDS. — It is very desirable that cage birds should become tame. Let them become fully acquainted with the members of the household. Teach them to eat out of your hand, but do not handle them. I have known excellent songsters to quit their sweet melodies after becoming the plaything of a child; and I have known much handling of birds to hasten their deaths. Do not catch a bird unless you must.

THE CANARY FAMILY.—There are many varieties of canaries, all having their peculiarities and attractions, but none have gained the popularity owned by the German song bird, or, as it is more commonly known, the Hartz Mountain breed. The male is the songster; the female rarely ever makes the attempt, and when she does, it is but a weak, unmusical sound. The night-singing variety will sing by lamplight, as well as daylight, and generally command a higher price. In this class also are found the Andreasberg Rollers, which are considered the finest songsters in the world. They are very readily taught tunes, and command ten dollars each.

The Cinnamon canary is in plumage just what its name indicates, and possesses pink eyes. Otherwise it is the same as the Hartz Mountain breed.

Next to the German bird we may class the Norwich. Its plumage is beautiful and its song bold, attended with a sweet melody.

The Scotch Fancy is of a perfect half circle, generally of a deep yellow color. As a songster, this also is not desirable.

The French canary, a close resemblance of the Belgian, has

ruffled feathers on the breast, and is altogether a very odd bird. As a songster it is not recommended.

Now comes the broken-backed Belgian. One would naturally suppose, seeing these birds, that their backs are broken. They are very delicate but noble birds. They will watch every movement

FIG. 1.—YUCCA FILAMENTOSA VAR. FLACCIDA.

you make, never seem shy, and become splendid pets. They have no song worth mentioning.

The Yorkshire, although an English breed, closely resembles the French variety, with the exception of the ruffled breast.

The London Fancy is of a deep orange color in body, with dark flight feathers and tail. It is bred more for oddity than song.

Of the Lizards, we have the blue spangled, gold spangled and silver spangled. The blue variety has a sort of bluish-gray color; the gold a green color with spangles and cap of a deep yellow, the silver have pale yellow spangles and cap, with a gray plumage otherwise. These, two, are only ordinary songsters.

The Manchester or Lancashire Coppy is the largest of the canary family. It is of a very commanding appearance, sporting a handsome crest. Its song is loud, but there is no music in it.

Thus we have the entire family, but after summing it all up, the reader can see that the German breed can well be classed at the head.

Mushrooms Plenty in England.—The chief supply of mushrooms to the English markets comes from cultivated beds; this is supplemented by large quantities which grow wild in the pastures and orchards. In England, as well as with us, the warm autumn months are most productive of wild mushrooms. This spring, however, the weather, during parts of June and July, has been favorable for the growth of wild mushrooms to an extent not before known, and the amounts gathered were enormous. One well-known gentleman reports as having gathered in his park, daily, for many days in succession, twenty-six bushels of mushrooms. These met with a ready sale at twelve shillings (three dollars) the bushel. Our correspondent at Rothamsted, Mr. Willis, states that the grounds of that estate provided mushrooms in profusion.

YUCCAS AS ORNAMENTAL PLANTS.

The various species and varieties of Yucca are in England placed at the head of hardy ornamental plants. Their peculiar foliage and profusion of flowers adapt them for use as single specimens in conspicuous places, or to form groups with other plants of bold character. In this country they are not planted in gardens so freely as we should expect, when we consider that several of them are hardy even in our Northern gardens, and all of them may be grown in our warmer States. The yuccas are natives of America, extending from 45° on our Western plains to Central America and Yucatan. Botanists differ as to the number of species. Baker of England placed the number at twenty-one, while our own Englemann made the number only twelve. It is probable that Baker included as species garden forms which Englemann regarded as varieties. The best known yucca in this country is *Y. filamentosa*, the "Thready Yucca," well known also as "Adam's Needle" and "Bear's Grass." This is found growing wild in Eastern Virginia and southward, and is cultivated almost everywhere in gardens. This species has several well-marked varieties in the wild state and others have been produced in cultivation. The typical form has leaves fifteen to twenty inches long, of a fine light green color, straight and stiff, and provided with a spine at the end; the margins of the leaves are furnished with threads or filaments (whence the specific name, *filamentosa*). These are of a grayish color, from two to three inches long, and very strong, and no doubt were made useful by the aborigines. The flower cluster or panicle arises from the center of the cluster of leaves to the hight of four to six feet, oval in shape and much branched, bearing flowers in such numbers that no branches are visible; the flowers are one and a half to two inches long, drooping, creamy white, often tinged with green. The variety *flaccida* (figure 1) is more slender and has weaker leaves than in the type, while the threads on the margin are much stronger. The flower cluster is more slender and open than in the type, and is esteemed as better for grouping than that. The species *Y. filamentosa* is readily raised from seed; a few years ago we raised a box full of seedlings, and planted a row of them over two hundred feet in length. The many forms thus produced were interesting, though none among them were sufficiently distinct to be continued. They all bloomed, but no desirable variation in color was obtained. The "Narrow-leaved Yucca" (*Y. angustifolia*) is interesting as being the most northern of all the species. This is distinguished from the preceding by having a distinct, above-ground stem, while in the other the stem does not extend above the surface, the cluster of leaves apparently resting directly upon the surface. *Yucca gloriosa* is a high-sounding name, but there are few who, seeing this plant in full flower, will say that it is not worthy of it. This species is found in the most Southern States; it has a short trunk, rarely taller than six feet, and when old, branches as seen in figure 3. The leaves are two to two and a half feet long; they are a pale green and have a sharp point. The flower clusters are two to four feet long, and when fully developed present a grand appearance. The flowers when wide open, which is in the evening, are from three and a half to four inches wide, whitish, tinged externally with green or brown. The fruit is much like that of figure 2 (*Y. filifera*) in form, with a purplish black pulp, and fairly edible as "Georgia bananas." We cannot say what are the precise northern limits of this magnificent plant; according to Breck it suc-

FIG. 2.—FRUIT OF Y. FILIFERA.

ceeds near Boston, Mass., with some straw over the leaves in winter. There are in cultivation some five or six well marked varieties of *Yucca gloriosa*, differing mainly in the character of their foliage. One of the most distinct of these is *Y. gloriosa recurvifolia*. The gracefully recurved character of its leaves, which give it its name, is well shown in figure 4. This variety has also been known as

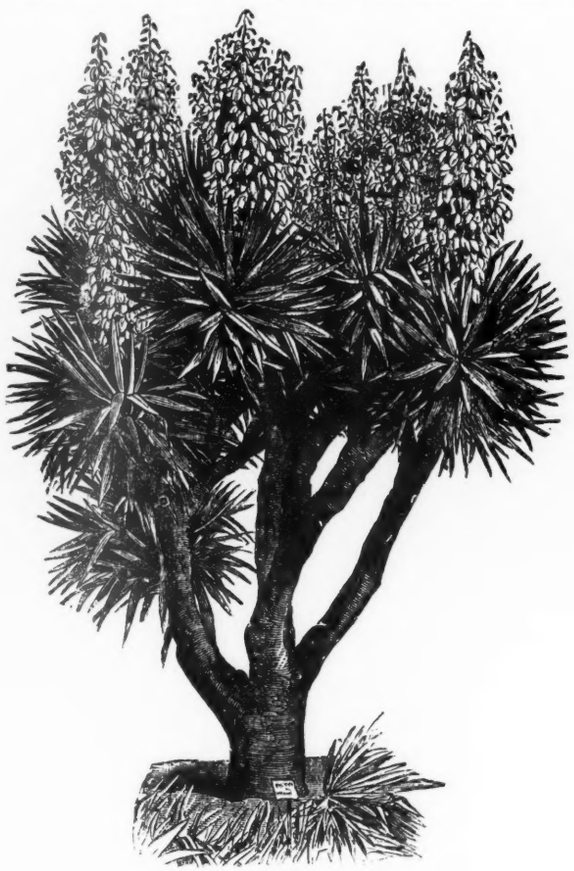


FIG. 3.—YUCCA GLORIOSA.

Yucca pendula, and as *Y. Japonica*. It is an elegant and attractive plant for vases. When the plants grow older the stem will reach a hight of three feet or more, detracting from their ornamental appearance. Young plants are therefore considered more desirable for planting in vases, window-boxes and similar purposes.

The finest of all yuccas—as, on account of its size it ranks as a tree, and by its abundant branches it offers to our Southern planters a most picturesque subject in "sub-tropical planting"—is the species which has unfortunately been called *Y. filifera*, a name which, from its resemblance to *Y. filamentosa*, must lead to confusion. This fine species the writer was one of the first to bring to the notice of botanists and horticulturists. Dr. Gregg had in 1840 sent home leaves and other materials, and the writer, in 1852, sent to Dr. Engelmann other specimens. That botanist took it to be a form of the "Berry-fruited Yucca," *Y. baccata* of Torrey. Seeds were sent to Europe, and plants were raised in the south of France, one of which bloomed in 1876, and allowed a French botanist to describe it, with the above name. The history of this noble yucca is completed by Prof. O. S. Sargent, in *Garden and Forest*, No. 7 [April 11th, 1888], who gives many interesting facts about it, and presents two large engravings, from recent photographs. Our southern horticulturists have yet to ascertain its northern limit and to determine how far north it may be utilized; but it is well ascertained that it is hardy wherever the orange may be grown. We first met with this species near the neat city of Parros, in the State of Nuevo Leon, in Northern Mexico, where it was generally known as the *Palma*. It was found wild in abundance, and was planted to some extent for its timber. The small plants were set near together and proved admirable live fences or inclosures. The tree is from fifteen to twenty and often fifty feet high, and the trunk is frequently five feet in diameter. The leaves are fifteen to twenty inches long, with reddish brown or white threads upon the edges. The leaves are persistent and remain upon the trunks and branches for many years. The panicles are four to six feet long, are pendulous, instead of erect, as in the other species. The flowers are small, being rarely over an inch long, and are succeeded by a berry-like fruit (figure 2). The pulp of the fruit is said to be pleasantly edible.

All the species of yucca thrive well in a light, sandy soil mixed with rotted sods. They require little, if any, manure. In their growing season they should be watered freely, at other times all that is needed is to keep them only moist enough to prevent their becoming shriveled. When grown in pots they may be wintered in a frost proof cellar.

AUTUMN TREASURES.

A light and graceful little picture frame—apparently of Swiss manufacture—proves on close examination to be merely a few dried twigs fastened firmly together with thread or fine wire, and how well it sets off a photograph or water-color! A peculiar, Japanese-looking box is found to be of common pasteboard, completely covered with pieces of the dry, greenish-gray cup moss or lichen, which is seen on rocks and old fence rails. This very easily obtained material is used also for covering a pine wood wall-pocket and bracket, which, when adorned with pressed maple leaves, ferns, and grasses, is very pretty indeed. Then there is a bracket made of pine cones, brightened up with clusters of black elder berries. A gypsy-kettle is made of a bird's nest suspended under three straight mossy twigs, which are bound together near their upper ends. A common pyrula shell from the sea-beach is polished with sand-paper, filled with earth, and planted with "moneywort," or any other trailing plant, which falls in graceful festoons when the shell is hung in a window. A cylinder shaped scrap-holder or newspaper case is made of an oblong piece of birch bark. The ends are sewed together with strong thread, a round piece of thin board glued inside at the bottom, the upper edge finished with a row of tiny cones glued on, and the joint concealed by a bunch of grasses, to which is added a group of oak leaves and acorns. These last are prepared for use in decorating, by each acorn being removed from

FIG. 4.—YUCCA GLORIOSA VAR. RECURVIFOLIA.

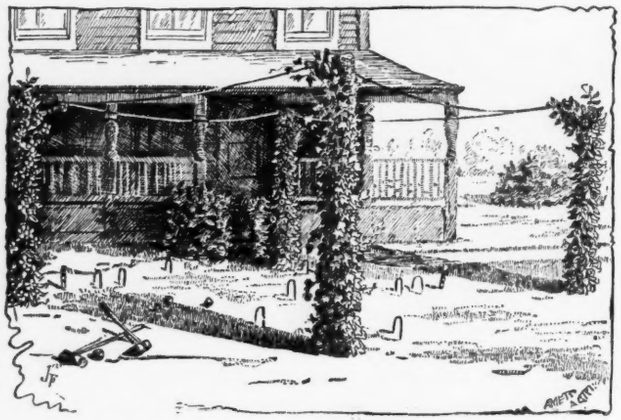
its cup, a thick green silk thread passed through the latter and knotted on the inside; the acorn is then glued in its place, and is thus provided with a loose stem by which to hang. One of the prettiest decorations for a window is a long festoon of bright red maple leaves. These are made soft and smooth (and their color preserved) by being pressed, when quite fresh, with a warm iron and covered with a thin layer of bees-wax, or preferably paraffine. They are then strung together on a coarse thread and draped around the window, especially over white curtains, where they last all winter.

THE HOUSEHOLD.

ORNAMENTAL SUPPORTS FOR A CLOTHES-LINE.

FRED. SCHOLES, KINGS CO., N. Y.

Some time since I built a house in the country and laid out a fine lawn around it. A part of the lawn being recently wanted as a drying place for clothes, and as the ordinary clothes-line post is an eyesore on ornamental grounds, I adopted the method illustrated in the accompanying engraving. I procured four cedar posts, seventeen feet long and twelve inches in diameter at the large end.



ORNAMENTAL CLOTHES-LINE POSTS.

The branches were all removed except a stout one at the summit of each post, which was cut to three feet in length. The posts were set five feet deep, in such positions as to inclose an irregular parallelogram on the grassy lawn, with the three-foot branches all pointing to the center. A strong peg was fixed six inches from the extremity of each branch, to hold a clothes-line. At the base of one of the posts I planted Ampelopsis Veitchii, at another Moon-Flowers, at a third Clematis Jackmani, and at the fourth, common Morning-glories. The climbers soon covered the posts, making them the most attractive objects on the lawn. Trumpet vine, Virginia creeper, or any other clinging climber would serve the purpose.

PUTTING DOWN CARPETS.

Nothing tries the temper like putting down carpets, except putting up stovepipe. The latter is an evil for which there is no remedy known. Putting down carpets may be made comparatively easy, at small expense. The saving in the feelings, to say nothing of the gain in time and better workmanship, will well repay the slight expense even on one carpet. The tools needed are a carpet stretcher, a hammer and some large sheets of paper (old newspapers will answer), and a cushion to kneel on. The hammer must be rather light, have a small face, not over half an inch in diameter, and the other end should have an edge at right angles to the handle. In other words, it is a small riveting hammer and weighs about five or six ounces. Take the tack in the fingers and, with the sharp edge of the hammer, the tack can be struck without hitting them, and fastened in place. It is then driven home with the face.

The paper or papers are to be spread about and are used to scatter the tacks on in advance of the person who is putting them in. The tack wanted can always be found and those not wanted do not stick in the fingers. The advantage of using the pads to kneel on will be discovered by using them once. By using the stretcher a Brussels carpet can be put down as tight as a "drum head," even when new. It saves the fingers, the carpet, the strength and one's patience. For a thick, heavy carpet use a ten-ounce tack with a broad head. Do not drive them in so hard as to bury the head, because they will hold without it and can be more easily removed. One person should put in the tacks, while another does the stretching.

The lining for ingrains, rag and other carpets of a similar character should be soft and open. Bagging or burlaps are good materials. These let the dirt and sand sift through to the floor and the carpet is not ground out so rapidly as on a hard or paper lining. For Brussels, Wilton, Tapestry and Moquette carpets paper makes a good lining, in fact everything will answer that will pad the floor well and keep the carpet away from the boards. These carpets are so thick and so hard on the back that if kept from the boards they only wear on the face, most of the dirt being retained in them. Thorough padding makes the carpet wear longer and the room is much warmer in winter, a consideration of no small consequence in a cold climate or in a house where the floors are open or defective.

CROCHET AND KNITTING.

CROCHETED TIDY.—Materials—Real Scotch linen crochet thread, two balls number thirty-five, cream color; a steel crochet hook. This tidy is composed of sixteen large rosettes, four wide and four long. When finished tie fringe in top and bottom. For first rosette, chain 5, and join. First round—24 treble crochet in this round. Second round—6 chain, 3 of which take the place of a T. C. [pass by 2 stiches, 1 T. C. into the next, 3 chain], repeat what comes between brackets 7 times, join with S. C. to the third of 6 chain. Third round—3 chain to take the place of a treble or T. C., 1 T. C. under last round [5 chain, 6 T. C. under last round], repeat what is in brackets 8 times, 4 T. C. under last round, join to top of 3 chain with 1 S. C. Fourth round—Work up to the center of first 5 chain with 1 S. C. into each stitch [7 chain, 1 D. S. into center of 5 chain], repeat between brackets 8 times. Fifth round—5 chain, 2 of these take the place of a half treble, 1 half treble into third of 6 chain [3 chain, pass by 2 stitches], repeat between brackets all round, join to third of 5 chain with 1 S. C. Sixth round—6 chain, pass by 2 stitches, 1 D. C. into next, repeat all round. Seventh round—Work up to the center of chain with 1 S. C. into each of 3 stitches, 3 chain to take the place of a T. C., 2 T. C. into next stitch, 5 chain, 3 T. C. into next stitch [3 T. C. into third of next 6 chain, 5 chain, 3 T. C. into next stitch], repeat between brackets all round. This finishes 1 rosette. In making next rosette, join to the center of 5 chain, when working the corresponding stitch on last rosette.

To fill in the spaces after all the large rosettes are made the following joining star is used. Commence in center with 16 chain, join round. First round—1 D. C. into a stitch, 5 chain, pass by 1 stitch, repeat all round. Second round—1 D. C. into center of 5 chain, 7 chain, repeat all round. Third round—1 D. C. into center of 7 chain, 7 chain, repeat all round. Fourth round—1 D. C. into D. C. of last round, 3 chain, 2 T. C. separated by 3 chain into center of 7 chain, 3 chain repeat. This finishes one joining star.

HOME-MADE JET ORNAMENTS.

The mania for jet trimmings still continues; and very pretty ornaments for dresses and bonnets can be easily and cheaply made with small cut beads and short bugles strung on fine wire. Figure 1 shows a pattern to be made of short bugles. String a long line of these; turn the end and form a leaf; twist the wire; then three or four bugles plain for the stem; turn and twist another leaf, and so continue till finished. Jet cat-tails (figure 2) are beautiful for bonnets. Use stiff wire for the stem. Cover three inches with cotton until it is the thickness of a lead-pencil. Sew black silk over this and cover close with beads by sewing or winding. The stems should be covered with black paper. Daisies (figure 3) are made with a little knob on the top of the wire for a center. This is worked with beads, and the petals are arranged around it, fastening each under the center. A little ingenuity will suggest many pretty designs for this work.

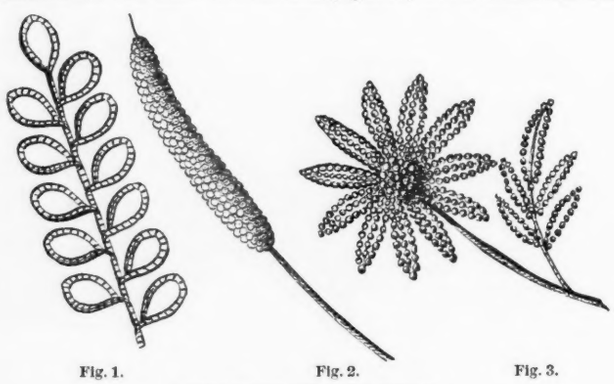


Fig. 1. Fig. 2. Fig. 3.

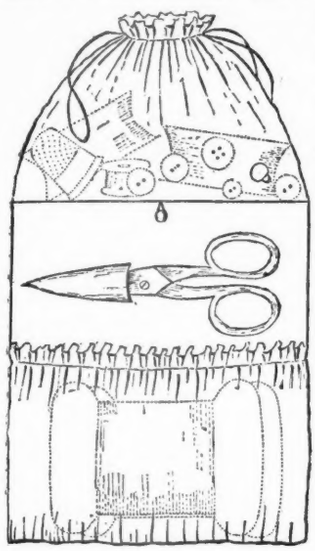
HOME-MADE JET ORNAMENTS.

Nightcaps.—Persons who suffer with neuralgia, tooth-ache, ear-ache, etc., should wear nightcaps. Many eminent physicians recommend the use of these old-fashioned and generally discarded

caps, and it seems only reasonable that a person sleeping in a cold room should have the head protected in some way. The simplest way of all is to wear a nightcap. Flannel is said to be the best material for this purpose, or crocheted worsted, either of which is better than linen or cotton, and ladies' caps can be made very pretty and becoming. Some persons assert that nightcaps prevent restlessness and bad dreams.

EDUCATION LIGHTENS WORK.

As a direct testimony to the value of a good education in enabling its possessor to take hold successfully of the humblest duties of domestic life, we give the following, related to us by a friend. She says: "Having no daughters, I have been obliged to make girls of my boys, so to speak, and have given them a thorough domestic training. There is no department of household industry, except sewing, with which they are not practically familiar. I had occasion the other day, when my housekeeper was away, to call one of my sons from his studies to help me in the kitchen. He had just shown me the orbit of a comet which he had drawn, and most beautifully drawn, from the formula given in his text-book, and was full of enthusiasm at the prospect of soon taking up calculus. As he was broiling the steak while I mashed the potatoes, he volunteered this remark: 'I can do housework a great deal better since I went to college than I could before.' 'How is that?' I asked. 'Why, I take hold of it in a more workmanlike and systematic manner.' 'Isn't that an argument for the higher education of women?' I asked. 'Most certainly,' he quickly responded." Now if a college education will help a man broil a steak nicely, will it not help a woman broil a steak nicely as well? Will it not help her "take hold of housework in a more workmanlike and systematic manner?" If she brings to her tasks a mind well trained and well furnished, will she not have the ability to take hold of *all* duties, menial and noble, and perform them in a better way than she who comes to them with an untrained and ill-furnished mind? She will have a logical method, a comprehensive method, a progressive method, that will include details, and simplify and energize all her operations. She will know how not to waste her powers in trifles, and how to apply them so as to produce most telling results.



SERVICEABLE WORK BAG.

A NEAT WORK BAG.

The device shown in our illustration will be found most convenient for a short journey, or to have hanging beside the dressing-table. The dotted lines indicate the articles it is to be filled with; of course, others may be added as desired. The case is made of tan-colored grosgrained ribbon four inches in width. It requires about five-eighths of a yard for one, and it should be seven inches long when finished. For the foundation cut a strip off seven inches long. For the bottom pocket, which is to hold the darning cottons, you will need a width and a quarter of the ribbon three inches deep. Turn the top down and shir it across, allowing it to be a little looser than the back; gather the bottom on the back, sew it in a seam and turn it up and overhand the sides together. The bag on the top requires but one width three inches deep; sew it in a seam across the bottom, turn it up, overhand the sides together; hem the top and run a shir in it for the silk cord, which is to draw it up. The silk and cotton in this are wound on little pieces of card-board, so as to be less bulky than spools. A piece of card-board is cut to fit in the space between the bags; this is covered on both sides with the ribbon; a few leaves of flannel are attached to it, and it is fastened on the foundation by a few stitches of silk at each corner and middle of the bottom. A little piece of the ribbon is hemmed on the outside to hold the scissors. It is held together with a loop and a button.

PRETTY PILLOW SHAMS.

Pillow shams, although abolished in some houses, still hold favor with the majority of housekeepers, and are seen in many styles at the present time. An exceedingly pretty design, a corner of which is shown in our engraving, is made of fine linen, the points on the edge being worked with coarse white cotton. The design, after being stamped on, is embroidered with the same material. The leaves are worked in the old-fashioned stitch over and over

DESIGN FOR PILLOW SHAMS.

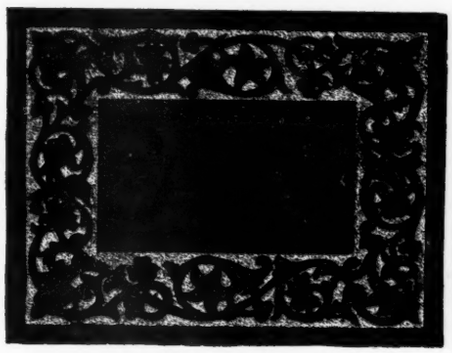
from the center to the edge, the vine in stem-stitch, and the blackberries are composed of French knots. The combination of the old and new style of embroidery produces a very striking effect. The sheet sham should be made to match.

A HANDSOME CARRIAGE ROBE.

The robe illustrated herewith is made of tan-color and navy blue cloth. The latter has a pattern stamped on it and is laid on the former and stitched down around on all the edges of the pattern, just inside of the lines. This is done with black silk. The center and border are also stitched; then the parts between are carefully cut out with a pair of small sharp scissors. The initials may be cut out of the tan-colored cloth and fastened on the blue if desired.

EARLY FALL FASHIONS.

For the first cool days of autumn, nothing will be found more convenient and comfortable than the fashionable English blouses of wool or silk that may be worn with light skirts, thus giving the desired warmth about the waist. These blouses are merely gathered or pleated basques that are worn with a belt, and if of flannel



HANDSOME CARRIAGE ROBE.

or any woolen fabric are made up without lining. In length they extend below the belt six inches in front, four on the hips and five at the back, while they are simply hemmed around the bottom. As is most becoming they are gathered all round the neck, just below the collar, in three rows of shirring, or else are gathered only in the middle of the front and back in one row. The backs have narrow side forms, but the fronts hang straight. Both fronts and backs are gathered at the waist-line and the pleating set on an inside belt.

The sleeves, which are full shirt sleeves with only one seam, are gathered in the armholes and finished at the hand by a wristband. The collar is a high standing band, and the belt is of the same material as the bodice, cut lengthwise of the stuff, is two inches wide and passes to the left side beneath a strap. For more dressy silk blouses, some variations are seen, and as they are usually of soft surah or China silk, they are made over a fitted lining, which has darts in front and side forms at the back. The silk is finely tucked in a pointed yoke shape in front, and then falls loose below, without shirring at the waist-line, being only confined by the belt. The middle back form is stitched in narrow tucks down the entire length and the side forms are plainly covered. The silk hangs longer than the lining and tapers to the sides. The full sleeves are tucked at the top and again at the wristband, while the collar and cuffs are also tucked lengthwise and finished by a little frill and row of feather stitching. With silk bodices, a ribbon belt, fastened by a buckle, is worn.

Only with plain tailor-made suits are the habit basques now much seen; for other dresses the belted-in waists, Norfolk jackets, jerseys, blouses or Garibaldis are more popular. Back breadths of skirts are frequently allowed to hang perfectly straight, but if drapery is desired the draping must be high, as low looping gives a dowdy appearance. The apron fronts are fuller at the top than they have been, often not being sloped at all, are pretty with many rows of shirring, done over cords just below the belt or else lengthwise tucks at the top.

The long *Directoire* coat is one of the successes of the season, and made either of camel's hair, cloth, silk or velvet, will undoubtedly be much worn on the street this fall. It is simply an undraped Princess polonaise, which reaches nearly to the bottom of the dress skirt and is open down the entire front. The front of the waist is turned back with revers, displaying a wide vest of embroidery or some contrasting material underneath. The sleeves are finished by large cuffs and broad square pockets are set on each hip. Knitted costumes of fine wool yarn, known in New York as "Tuxedo suits," are extremely serviceable for out-door games of all sorts, for boating, picnics and general outings in the country. They can be bought throughout and consist of a full skirt, blouse waist, sash and cap, each piece being finished with ornamentation, knitted in a contrasting color. For the economical, however, we would advise the making of a full flannel skirt and blouse at home and the purchase of a wool blaizer and hat to match. The blaizers are very jaunty and can be used as house-sacques as well as out-of-doors. They are usually striped, but come also in plain white.

Embroidery is a more popular trimming than ever, even in its simplest form, and a cheap and effective ornamentation for waists, jackets and even dress skirts, is the old-fashioned herring bone or feather stitching, worked on the material in very much enlarged proportions, with wool or floss silk. For instance, upon a skirt of light blue or pink silk or cashmere, five rows of herring bone stitch are executed in heavy white silk, forming a most novel and pretty bordering; while on white flannel the same is worked in red wool. Waist seams, yokes and girdles are also feather-stitched.

It is likely that leather will be much used on cloth dresses this fall in the form of small straps with buckles, while the new belts are principally of this material, with metal mountings. These leather trimmings have already been shown on a few woolen mountain suits, some having even a border of écru or russet leather.

It is rumored that we are to return to the old arrangement of hair, in large, low, braided coils or hanging catogan loops, but at present the style is neither high nor low, coils of soft loose tresses or braids being placed just back of the crown. Young English girls bind their locks with fillets of ribbon, while in France wreaths of flowers are again worn in the hair.

A Home-made Fruit Dryer.—I find the following device for drying fruit very serviceable: Make a case about six inches deep, of proper dimensions for receiving a convenient number of suitable trays; cover with glass, in the easiest way, by rabbeting the upper edges of the sides and of the necessary strips across the top; lay the glass without lapping or putty. Openings at the sides would allow trays to be put in or taken out, endways, at any time. Ventilate by a small inlet and by a much larger outlet flue; the latter terminating as high as convenient. Mount the case on two wheels, or by some pivotal contrivance, so that it can be turned as the sun changes, and tilted to an angle to receive the sun's rays directly at all times. By this means fruit can be dried much faster than in the usual way, as it will not need to be covered or taken in at night. It will not become filthy from flies and dust, and the product will be better in color and quality than if exposed directly to the sun. A case say seven by ten feet would hold twenty trays, or about ten bushels. Trays should be narrow, to prevent them from sliding. C. G. CALKINS, Tulare Co., Col.

SACHET.

A dainty sachet can be made of a yard of violet grosgrained ribbon in this manner: First cut the ribbon in two; take one piece, turn the ends of it over so as to meet in the middle, overhand the edges neatly together, leaving it open in the center; fill the ends with cotton scented with violet sachet powder, leaving a space in the middle of about an inch and a half; do the other piece the same way; now draw the center or part where the ends meet together as closely as possible on each piece, and lay one across the other in the center to form a cross; a small bunch of artificial violets are sewed in the middle. They are equally as pretty made of pink or white. The width of the ribbon will depend on the size you wish the sachet. Two and a half inch ribbon makes a pretty size for one.

OLD DOMINION RECIPES.

LADY SKIPWITH'S APOQUINIMIES.—Into one quart of flour, rub one tablespoonful of butter and two eggs, the whites and yolks beaten separately until very light. Make into a paste with a pint of sweet milk. Roll this soft dough out on a board into a thin sheet and cut into the shape of biscuits, only twice as large. Bake these cakes on a gridiron. They are to be eaten hot for tea, and are piled one on top of the other, in a large plate, when sent to the table, after having been severally dipped for a moment into melted butter. They were considered delicious when served at the "handed teas" among the old-time Virginians.

SPONGE CAKE PUDDING.—Make a sponge cake out of twelve eggs, half a pound of flour, one pound of white sugar, with the juice and grated rind of one lemon, and bake it a half inch in thickness, upon flat sheets or in shallow pans, previously greased and lined with paper. When done, cut in squares or oblong strips, and spread with jam. Then lay these in a baking-dish until it is nearly full. Now make a nice boiled custard of three pints of milk, the yolks of six eggs, and six tablespoonfuls of white sugar. Season with a teaspoonful of extract of vanilla, and pour the hot custard over the layers of cake. Lastly, beat the six whites of eggs until they will stand alone, adding gradually four tablespoonfuls of pulverized sugar, and flavor with a few drops of bitter almond. Spread this meringue over the top of the pudding and brown slightly in the oven. This quantity is sufficient for sixteen persons, so that half the ingredients named above will be sufficient for a family of ordinary size. It makes a very nice dessert.

ALMOND CHEESE CAKES.—Blanch and pound four ounces of sweet almonds, and two or three bitter ones, in a tablespoonful of water. Add to them four ounces of sugar, one tablespoonful of cream, the whites of two eggs well beaten. Mix all together as well as possible, and bake these cheese cakes in patty-pans lined with puff paste. Twenty minutes are enough to bake them, in a moderate oven.

APPLE COMPOTE.—Core some fine pippin apples, and prick them with a knife, after peeling them, and throw them into cold water. Weigh them and allow a quarter of a pound of sugar to each pound of apples. Put this sugar and whatever seasoning you like into a keetle with as much water as will cover a layer of apples. Put the apples in only enough, at once, to cover the bottom of the kettle, and let them stew gently, until tender and clear through. By the time all are done the syrup will be sufficiently thick. The juice and rind of one lemon may be allowed to each three pounds of fruit. For variety a flavoring of mace, or a few cloves, may be preferred. When sent to table, serve the apples in a deep dessert dish, and pour the syrup over them. Cream or rich milk is almost an indispensable accompaniment to this compote.

GINGERBREAD NUTS.—One pound of flour dried and sifted, one pint of molasses, a light teacupful of brown sugar, a teacupful of butter, a heaping tablespoonful of ground ginger, and any other spice that you fancy. Melt the butter with the molasses, and add them to the flour when about lukewarm with the other ingredients, and then mix all well together. Drop the batter from a spoon on to buttered tins, and bake them in a moderate oven. Ginger cakes burn more readily than any other kind of cake.

THE BOYS AND GIRLS.

"SIMPLE TIM."

There were so many boys on the streets that morning, on their way to school; boys of all sizes, from those who could parse in Latin and Greek down to the little fellows in blouse-waists and knickerbockers who were just learning to read. There were mischievous boys, with pop-guns in their pockets and plenty of strings and pins; quiet boys, with flowers in their hands to present to the teacher; good boys who always learned their lessons, and bad boys who often played truant, especially when a circus came to town. But one boy stood apart, and watched the others in silence as they hurried by. This boy was tall and thin, and his clothes were very loose and ragged. In one hand he held a small rusty hatchet, while deep down in the loose pocket of his blouse was a handful of bright new tenpenny nails. He smiled when the boys called "Hello, Tim!" but did not respond nor join them. Though he was nearly sixteen years old he had never been to school in his life; for Tim was an idiot. The last bell rang, the boys had all disappeared except poor Timothy Scanlan, who stood before the door of his mother's house, watching, until

"VELL, VAT YOU SEE, MINE POY?"

the last one had turned the corner. His mother's house—for his father laid no claim to anything. He was an idle, harmless fellow, content to sit by the fire and smoke, while his busy wife bustled about the small room, sweeping, cooking, and scolding—scolding her husband, scolding her two daughters, "Mimy" and "Tildy," and always scolding poor Timothy if he was within reach of her voice, until Tim would run out of the house, or get behind his father's chair, stammering apologetically, "I—I—I—didn't mean to."

Perhaps there had been trouble of this kind in the house this morning, or perhaps it was the fine weather that tempted him to come out; but at any rate there he stood, and let the wind blow through his long and tangled hair. An idiot, did we call him? Let us say rather just a happy, simple-minded child, with a head very full of strange quaint fancies—and nothing else. Suddenly, as he stood there, one of these fancies seemed to seize him. He ran around the house, darted into the wood-shed, where Mimy was gathering up an apronful of chips for the kitchen fire, and rushed out again, dragging after him a clumsy wooden cart. One wheel

TIM LOOKED UP AND SMILED.

was loose, and the other squeaked in a fretful, complaining way, as if it didn't want to turn at all, and wouldn't only that Tim ran so fast.

Out of the gate and down the street, rattling over the cobblestones, rumbling over the bridges, splashing through the gutters, what a racket they made! No one stopped him; so on he went, till at last, attracted by the bright ribbons in a milliner's shop, he paused for breath; and then it was that his eye caught sight of something in the next window—a big china doll, with great staring eyes and a gaudy yellow dress. This doll had once been pretty; but that was long ago, before the suns of many years had faded her black hair, and before her terrible experience, one autumn night, when a cruel wind had blown a sign-board against the window, crashing the glass and giving the rain a chance to get in and spoil her pretty dress.

The shop-keeper, old Jacob Bleimer, watched him from the doorway. "Vell—vat you see, mine poy?" he said. "Is it dem marples in der basket, maype? Or dose balloon on der shelf? Vy dond't you shpeak oudt?" Tim turned from the window and gazed

into the smiling German's face, then he pointed a dirty finger at the doll. "Give Tim the pretty lady," he begged. Old Jacob smiled broadly, "Oh, it vas der doll you vas vanting. Vat you gif me for her, if I ledt you haf her? hey?" Tim looked puzzled, then he thrust his hand into his pocket and drew out a bright new nail. "See," he said, and held it out eagerly; but the old German only smiled the more and his fat sides shook with laughter.

A little girl went into the shop and laid something round and bright on the counter, and Tim saw the shop-keeper lift down a jar of candy and give her several pieces. Perhaps the nail was not bright enough. Just then a man came around the corner scattering bills as he walked briskly along. Some of these he threw in at the open windows, others he fastened around door-knobs. Tim forgot his troubles and ran after him, gathering up the bills as fast as they fell to the ground, until he lost sight of the stranger, and then he wandered back the way he had come, dipping the bills into the gutter until they were thoroughly wet, and pasting them up on the houses and lamp-posts as he went along. When the bills were gone he found small pieces of boards and nailed them up on the fences. But in this he was interrupted. An Irish woman, who was hanging up clothes in her back yard, did not care to have her fence decorated in this way, and lost no time in telling Tim so.

"Be off with yez!" she cried. "Did I iver see sich impidence, pastin' papers on me front windy, an' nailin' boords on me clean white fence! Git away now, or I'll be pullin' ivery hair out o' yer head, an' no small job it 'ud be ayther!" And as Tim, not understanding a word she had said, began slowly to drive in another nail, the enraged Bridget rushed toward him, brandishing her long clothes-stick in the air. In so doing she broke the clothes-line, which, in coming down, pulled over the scanty palings that surrounded the small chicken yard, and the frightened hens flew in all directions, cackling so loudly that Tim, alarmed at the general hubbub, took to his heels nor stopped until he had reached the railroad depot, where he climbed into an empty coal car and sat quaking with fear and murmuring feebly, "I—I—d-didn't mean to."

At last, however, gaining courage from the stillness, he peered over the top of the car, and seeing nothing more alarming than a little black kitten, he crawled carefully down again. He still had one board left, and with this in his hand he wandered down the track toward the long iron bridge that spanned the river. It was a new bridge, but having been injured slightly by the spring floods the superintendent of the road had ordered new rods to be put in, and other repairs to be made. The work had been going on all the morning, but now it was finished, the last workman was even then leaving the bridge. Tim passed him, walked carefully out to the center, and leaning over the edge nailed his bit of board to one of the heavy timbers. Not satisfied with two or even three nails, he took all that he had from his pocket and spreading them out upon the rails drove in one after another until he had used them all, and could not have found room for another if he had had it.

One workman whom he had passed had been watching him all the time and had waited for him to come back again, for he was curious to know what kind of a sign the boy could be putting up in such an out-of-the-way place. And now as Tim approached, this man joined him and said, by way of beginning the conversation, "Well, Bub, that's a queer place for a sign." Tim looked up and smiled a very little but made no reply. "What are you advertisin', anyhow?" persisted the man. Still no answer. "Is it a patent medicine or a cattle show? What's the matter with you, anyhow? Can't you talk?"

A troubled look came into Tim's eyes. "I—I—I—didn't mean to," he stammered. The workman looked at him silently for a few minutes, then he turned and went back upon the bridge, his curiosity thoroughly aroused. Timothy, just a little frightened, he knew not why, ran down the track, passed the depot, and crossing the street sat down upon the curbstone to meditate. A few minutes later a nervous little man bounced into the depot, sank down into the nearest chair, and began to rub his forehead vigorously with a large blue handkerchief. He seemed to be very much excited over something, and a hackman standing outside on the platform, being curious to know what had disturbed him, leaned forward a little, rested his elbow on the window sill, and remarked, "You needn't 'a hurried so, Mister, train ain't due till ten thirty."

"Yes, I know it," replied the other shortly; and then he came out upon the platform and began to walk up and down. "Look here!" he said, "who is that tall fellow across the street, leanin' against a post, see him?" "With a hatchet in his hand?" "Yes." "That feller?" said the hackman slowly, "why that's 'Simple Tim.' I thought everybody knowed him, he's an ijit." "An idiot, is he? Well I never! That's why he didn't talk much, poor fellow." And the nervous little man began his walk again, up and down, up and down.

"Do you know," he began, "if it hadn't been for that idiot over there, I'd 'a been a ruined man! and the train that's due here in fifteen minutes, with my boy on board as I haven't seen for more'n a year, that train would ha' been wrecked! smashed! and a hundred lives lost!! Yes, sir! that's so!" And the excited little man took off his hat and wiped his forehead again with the gorgeous blue handkerchief. "I see you don't believe it," he continued, "you think I'm crazy too, but I tell you what! A while ago I saw that 'Simple Tim,' as you call him, out on the bridge nailin' up a sign, and when he came back, I says, says I, 'What's the sign you were puttin' up there, Sonny?' But he didn't answer, nor he wouldn't say a word; so thinks I, I'll go back and read that; which I did. I couldn't see it very well, so I got down on my knees and leaned over the edge of the bridge; and when I saw nothin' on it, I just said to myself, 'Peter Patterson, you've come way back here to look at an empty board—you are greener than I took you to be,' and I got up to go. Just then I saw somethin' I'd neglected to fix, when I was sent out to mend the bridge this morning; one of the nuts on the main rod, that I'd forgotten to screw up; but it made the whole thing loose, and that train would have broken through sure. It just makes me cold to think of it! I had my tools with me, so of course it didn't take me long to fix it, but all the while I kept sayin' to myself, 'Peter, you let this be a lesson to you, never to leave your work till you are sure it's finished, and everything as it should be.' And I won't forget it very soon, I tell you! I feel eternally grateful to that boy, I do so! and I'm going over to talk to him as soon as the train comes in."

He had hardly finished speaking, when the whistle was heard, and before long the sympathetic hackman, who had been watching almost as eagerly as did Peter Patterson, saw a bright lad of fifteen jump off the car and rush up to his father, with a merry "I'm here, Daddy! all right!" But in his joy over his boy's safe return, Peter did not forget poor Timothy (who had left his post and wandered down the street soon after the train came in). And so, having told his son all about the lad, he took up the boy's valise, jammed his hat down on his head till only his ears saved his face from being completely covered, and together they started briskly down the street, overtaking Tim just as he reached the little corner-shop, where Jacob Bleimer displayed his marbles, kites, and dolls!

Tim did not notice the two strangers who had followed him into the store, and who now stood red and breathless, watching him as he drew all his treasures from his pocket. Tim was intent upon these treasures, and his thoughts were on the doll in the window. At last he found what he wanted, and held it out to the shop keeper triumphantly. It was a small round tobacco stamp of bright tin.

"See," said Tim, "*money! Now* give me the pretty lady."

He looked so eager, so confident of success, it seemed a pity to disappoint him, and the old German began to explain as gently as he could, "She cost mooch more money than this—I cannot gif her away for notings at all."

But Peter interrupted him, "I'll pay for it, let him have it; he's done more for me this day than that doll is worth, and more than I can ever pay him for."

Jacob Bleimer looked surprised, but without a word he turned to the window and cut the strings that held the doll in her place.

It was high noon; the hackman was at the depot again, waiting for the twelve o'clock train. The boys were coming home from school, with shouts such as boys have to give now and then, "to let off steam." They passed the Scanlans' house. "Oh, look!" they cried, "Timothy Scanlan's got a doll!" and they laughed good-naturedly among themselves. But they never knew why it had been given to him, and for that matter, neither did Tim.

Riddles in Olden Times.—There were many ancient books of riddles written in Persian and Arabic tongues, and the Egyptians, Romans, and early Greeks were fond of asking puzzling questions at their banquets. Indeed, Homer, the great Greek poet, is said to have died of mortification at not being able to answer a riddle that was proposed to him. But whether that be true or not, it is certain that these ancient riddles were very serious and important matters, entirely different from our merry pastimes. Indeed, some dictionaries define a riddle as "a paraphrastic presentation of an unmentioned subject." Some of our young readers will call to mind the riddle of Samson to the Philistines, and that of the Sphinx to

Œdipus. It was not until the Middle Ages that puzzle making and guessing became a mere idle amusement, and it was then indulged in by the barons and their merry retainers. In 1511 a book of puzzles called "Joyous Demands" was printed in England by Wynkin de Worde. One of the riddles in this old book is: "What is that which never was and never will be! Answer: A mouse's nest in a cat's ear." In the eighteenth century riddles became generally popular and even the great poets of France and Germany made use of them in their writings.

THE DOCTOR'S TALKS.

Said a friend to me: "If you wish to talk about common plants, a plant that is found almost everywhere, and one that is known to every boy and girl at sight, you should talk about the Dandelion." My friend was right as to the widespread character of the dandelion. When we talk about a plant, it is well to have a specimen of it in hand. As I shall talk to you about the dandelion, the first step will be for each one of you to dig up a plant by the roots. You will have no difficulty in procuring a specimen. If you live in the country, you will find them along every roadside, in every pasture or meadow; indeed, wherever there is a grass plot, large or small, its green surface will be dotted with the bright yellow flowery heads of the dandelion. They are most abundant in the spring, but they may be found all through the warm months until frost puts an end to all bloom. Those who live in cities and villages will not have to go far on the outskirts to find the dandelion. In early morning the flowers are more likely to be open than later in the day when the heat of the sun causes them to close. By the aid of a strong old knife, or a trowel, dig up an entire plant, not only what appears above-ground, but as much of the root as you can conveniently get up. Shake off the earth from the root, pull off any lower, partly decayed leaves, and wrap your plant in an old newspaper, or stiff brown paper. Of course you have taken care to dig up a plant with several flower heads upon it; all the better if there are, besides those in full bloom, others not yet open, and others still that are past flower. Besides the entire plant, it will be well to take several separate heads, with their stems. Wrapping them all so that the sun will not fall upon and wilt them, and so that they may not get bruised, get home with your treasure as soon as possible.

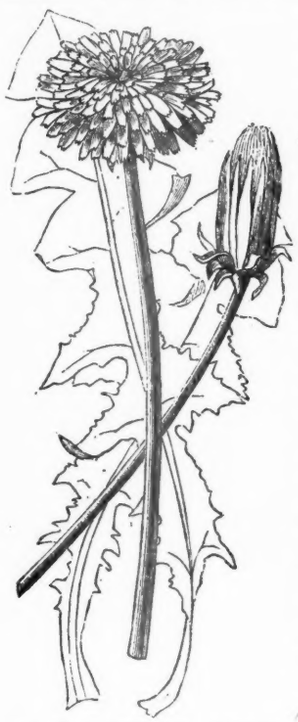


FIG. 1.—DANDELION FLOWER AND LEAF.

TO EXAMINE YOUR SPECIMENS.

Though the dandelion is so common a plant, when dug up for study it becomes a specimen, and should be treated as if it were exceedingly rare. If careless with a common plant, one will be apt to be so with a rare one. All good housekeepers dread what they call a "muss;" and in the study of plants one is very apt to "make a muss" unless care is taken to prevent it. If one lives in an old-fashioned house, the young people can be provided with room for play or work, in a manner unknown to children in a modern house without a garret. In the absence of a garret, parents often provide the children, especially if there are several boys, with a shop, a room in some out-building, where they can keep their tools, do their tinkering, and above all other things—lock the door! Such a room as this is a good place to study plants; but as every one is not so fortunately placed, the examination of plants must be done by the majority in one of the rooms of the house, and by learning to work neatly, no objection will be made on account of "the muss." By spreading old newspapers upon the table, and upon the floor beneath, all the litter that will be made can be readily removed. To go to work with the dandelion, first wash the root, and shake off the excess of moisture. Lay the plant upon a newspaper in a natural position and

BEGIN AT THE ROOT,

which you will notice is large and solid and evidently lasts from year to year. Many plants—beans, for example—come up from the seed, flower, and bear fruit or seeds the same year, and at the end of the season die; the plant does its work all in one year. Such plants are called annuals, as they last but a single year. Some roots, like the beet, parsnip, and many others, pass the first year of their growth from seed in forming a large fleshy root. These roots, preserved from injury by frost during winter, are planted out the following spring; they throw up tall flower-stalks, produce a crop of seed, and the root, having exhausted itself, dies. Such roots, living two years, are called biennials, and plants having such roots are biennial plants. The roots of trees and shrubs, and of many herbs, the stems and leaves of which die down each winter, while the root lives on for several years, are perennials. The dandelion has a root of this kind, as does horse-radish. Many of the plants of the flower garden, such as the pæony, monkshood, and many others are perennials. As the above-ground portion of these plants dies every winter and comes anew from the root each spring, they are called Herbaceous Perennials, to distinguish them from those in which the stem is also perennial. In examining the root of the dandelion, you will notice that when it is cut or broken it gives out a juice which is like milk in appearance, and very bitter to the taste. You will observe that the dandelion has no proper stem, but that the leaves and flowers arise from the top of the root. Such leaves are termed "radical."

FIG. 2.

FIG. 3.—DAISY.

NEXT EXAMINE THE LEAVES.

You will find that the leaves, as well as all other parts of this and other plants, vary greatly in size, according to the nature of the soil in which they grew. If the dandelion grows by the roadside, in sterile soil, its leaves and flower stems are usually but three inches long, while if the plant is in rich soil these are a foot or more high, and the leaves two or three inches wide. The general shape of the leaves is lance-oblong, with their edges or margins variously toothed. Sometimes the teeth are very prominent and hooked. Leaves with such margins are called *runcinate* (saw-toothed). The shape of the leaves gives to the plant our common name, dandelion, which is from the French, *Dent de Lion*, "Tooth of the Lion," or "Lion's Tooth." According to some, on account of the shape of the teeth upon the leaves, and there are other less probable reasons given. The botanical name of the genus is *Taraxacum*, said to be from the Greek word, "I stir up," alluding to its disquieting effects when taken medicinally. The specific name is *dens leonis*, "Lion's Tooth," the whole name being written *Taraxacum dens leonis*, Desf. This last (Desf.) is the abbreviation for Desfontaines, the botanist who gave it this name.

FIG. 4.—SECTION OF DAISY.

THE FLOWERS OF THE DANDELION

appear in early spring (you will have noticed that I have called them heads of flowers), upon a naked stem at the very top. You will find the cluster made up of a great many separate flowers, as in figure 1. In the same figure is shown a flower-head closed. Examine your plant and see that each head has below it a number of green leaves, which, when closed, completely surround it. Taken together, these leaves form an involucre. The leaves, or separate parts of which it is made up, are termed scales. The best way to examine flowers of this kind is to cut down through the head with a sharp knife. This will allow you to see its arrangement. In the first place you will observe that the involucre (also shown in E, figure 2) has its leaves or scales in two series; an outer one, of which the scales are more or less reflexed (bent back), while the inner row has thinner scales, which closely surround the enclosed flowers, and have usually scarious margins; that is, the margins

appear "skinny," as if withered, and are usually white. I have spoken of "flowers of this kind," meaning those which have their little flowers, as in the dandelion, gathered into a head, which is commonly taken for the flower, whereas it is many flowers. The older botanists called the heads made up of numerous small flowers "compound flowers," and at present the family having such flowers is called

THE COMPOSITÆ OR COMPOSITE FAMILY.

Plants, as we have seen with the buttercup and its relations, are grouped in families, or orders; terms which mean the same. The composite family, or, as it is more convenient to term it, the *Compositæ*, is the largest of all the families of flowering plants; it is estimated to comprise one-eighth of the flowering plants of North America. They are readily recognized as belonging to the family, though to identify the individuals is often difficult. The *Compositæ* of the United States are grouped in two great divisions or sub-orders. The dandelion represents one of these. In this the florets in a head are all alike and are flat, and of a form called strap-shaped or *ligulate*, and this division is called the *Liguliflorœ*. To illustrate the other and much larger division we will take

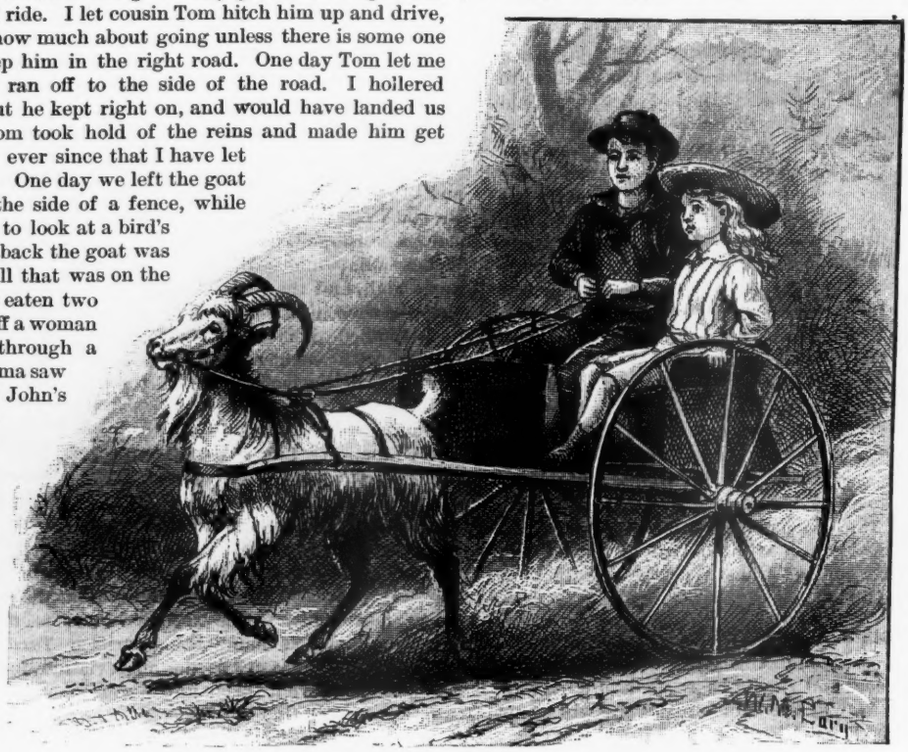
THE OX-EYE DAISY,

another very common flower, which is known to many farmers as white weed; for it is often so abundant that a meadow appears an unbroken sheet of white, no grass being visible. You see at a glance at the head of flowers of this daisy, figure 3, and still more readily if you cut one through lengthwise, figure 4, that its florets are of two kinds. THE DOCTOR.

BERTIE'S LETTER FROM THE COUNTRY.

Dear Papa: I am pretty well, and have had lots of fun here at Forest Lake. Uncle John has got a Billy goat and a wagon that we hitch him to and ride. I let cousin Tom hitch him up and drive, for the goat don't know much about going unless there is some one driving that can keep him in the right road. One day Tom let me drive, and the goat ran off to the side of the road. I hollered "Whoa!" to him, but he kept right on, and would have landed us in the ditch only Tom took hold of the reins and made him get back into the road; ever since that I have let Tom do the driving. One day we left the goat and wagon up by the side of a fence, while Tom climbed a tree to look at a bird's nest; when we got back the goat was eating up a circus bill that was on the fence. He had just eaten two horses and the legs off a woman that was jumping through a hoop. One day mamma saw him on top of Uncle John's glass house where the grapes grow. Mamma hollered and the goat just ran right along on top of the peak till he came to a big sash bar, and then ran down that to the edge and jumped off. He got his foot through in one place and broke a pane of glass. Cousin Tom has got a boat and he and I go out fishing on the lake most every day. Tom rows the boat. One day he let me take one of the oars to row, but it wouldn't stay down in the water and I tumbled over backwards into the bottom of the boat. Tom laughed and said I had caught a crab. I looked down into the boat and there wasn't any crab there. Sometimes the fish bite, and we catch bass and perch, and bull-heads. Mamma says you are coming here next Saturday to stay over Sunday; when you come I wish you would please bring me a fish-line and some hooks. I got one of cousin Tom's caught on a root and broke it off. Good-by.

Your affectionate son, BERTIE.



"SINCE THAT I HAVE LET TOM DO THE DRIVING."

Requisites for Health and Happiness.—It is not necessary for the happiness of a household to have many dishes at each meal, but it is requisite, both for health and happiness, that those you do have should be well cooked. A good thing is always cheaper than a poor one, and there is nothing so expensive in a sanitary point of view as greasy, ill-cooked food. Many a man has taken his first drink on account of the feeling of nausea and indigestion caused by a badly cooked dinner.

A TALK WITH BOYS.

Nowadays the American girl appears to me to be receiving an undue amount of advice, praise, and encouragement in print, while her oft-times worthy brother is quite neglected. Maybe you will scoff at advice to boys coming from a woman, but I have boys of my own, and I somehow feel as if a mother comes nearer to her boy's heart than any other relation.

I know somewhat of how a boy feels. He likes to have his impulses understood, and his ambitions encouraged and directed by a sympathetic heart and head. I take it that the lads I am talking to are farmers' sons. Perhaps some of you don't want to stay on the farm. It may be that you so much despise farming as that you may feel that you have no vocation for that pursuit. You have no money, very little education, and you don't know exactly how to begin to raise yourself. Now there is one thing you can do without money, without education, and without influence. You can cultivate yourself. No, I don't mean that you can study Latin, or higher mathematics by yourself, although even that has been done. I simply mean that you can cultivate your manners. You can make yourself an unaffected, frank, manly, respectable man. Some one calls manners "enamel on solid gold." Your manners are as much of a study as any other accomplishment, and I will venture to say that it goes further. A courteous bow, a pleasant, frank smile and a respectful reply never passes unnoticed where notice is worth anything. You can rise when a lady enters the room and hand her a chair, remaining standing until she is seated. You can rise to open a door for a lady and bow as gracefully as you know how when she passes through. Home, let me whisper, is a good place to practice such little elegancies. If you begin to pay such manly attentions to your mother and sisters, you will perform them with the greater ease in society. If you sit still in the only easy chair with your feet stretched out while your mother stands or uses a less comfortable one; if you can loll at ease while she carries a hod of coal, or a bucket of water, you had better stay on the farm and live as much out of doors among the animals as you can, for though you had the wealth of a Vanderbilt, and the garb of a Beau Brummel, you would be no ornament to society. Learn first to be a gentleman, so that if you seek employment men will say "that lad is at least a gentleman." You don't want books on etiquette. Read the Bible, and if you follow just one rule in that (the golden rule of "Do unto others as you would that they should do unto you") you will have pretty good manners. Rowland Hill said: "I do not think much of a man's religion unless his cat and dog are the happier for it," and just so your courtesy and gentleness, if they spring from your heart, will make not only your father, mother and sisters happier, but even the dumb brutes around you. Good manners, like good words, cost so little and are worth so much. ALICE CHITTENDEN, Cal.

Farming in Foreign Lands.

Our readers in all parts of the world are earnestly and cordially invited to contribute letters or notes to this department.

Cherries are a profitable crop in some parts of England. At the Kentish fruit sales, six acres of cherries sold for $900.

Centrifugal cream separators have been introduced in the dairy sections of most of the English colonies, with satisfactory results.

The ostrich farm which has been maintained by Mr. Wilson at Delhi, India, with more or less success during the past few years, is about to be abandoned.

Public sentiment in Germany is much stirred up over the extermination of birds, and the government is endeavoring to devise some means for preventing this loss.

Aberdeen Angus cattle are fast growing in favor in Australia. At a recent meeting of breeders at Victoria it was decided to form a society and bring out a herd book of the breed.

Peach yellows is ravaging the orchards in some parts of New South Wales. The fruit-growers' union at Parametta reports some success with lime as a specific against this trouble.

The chestnut crop at Brest, France, which represents a value of half a million dollars annually, has been seriously curtailed in consequence of a blight on trees, which is locally known as *pied noir*, or black foot.

The margarine act is vigorously enforced in England. Cases in which the imitation butter are exposed in tubs, so arranged that the legal brand could not be seen, are held to be infringements of the law, and the offenders are heavily fined.

At a farm in Aberdeenshire, Scotland, there are three horses that work regularly, whose ages are twenty-five, twenty-six and twenty-eight years respectively. Can our readers in any part of the world beat this record for a like number of animals?

Spontaneous combustion occurred in a threshing machine working at Canterbury, New Zealand, on wheat very foul with smut. It is surmised that under certain conditions smut becomes highly inflammable. We believe this is the first instance of the kind on record, however.

The beet carrion beetle (*Sylpha opaca*) is proving disastrous to mangolds in England. It is black and shiny, with a little yellow at the front edge of each segment or ring. This insect formerly lived on putrid animal substances, and only of recent years has acquired a taste for beet leaves and mangolds.

The complaint of increased farm mortgages is not confined to the United States. It has become a serious question in Prussia, where the mortgages on farms amounted to about three hundred million marks (a mark equals twenty-four cents) in 1835, which increased to five hundred millions in 1865, and to over twelve hundred million marks in 1886.

Royal assent has been given to the act of the New South Wales Parliament to prevent the admission of Chinamen. The feeling has become so strong that not a few influential journals advocate forming an Australasian confederacy entirely independent from the mother country. Now that the country is a century old, they hold that it should "go alone."

The Royal Agricultural Society of England has held forty-eight shows, at which it has paid out in premiums and expenses $375,796.96, and has received $198,483.56, leaving a balance of $177,313.40 spent for the purpose of bringing sound agricultural teaching to every district in the kingdom. It offered this year $20,000 in premiums, besides which $5,000 were offered by other interests.

At the great Northern exhibition in Copenhagen, the agricultural section will be very complete. The principal feature will be a model Danish farm of sixty-five acres, including the best selections of all breeds of Scandinavian stock and comparisons between the methods, implements, and stock of the past and present. An Agricultural Congress will be held in connection with the exhibition.

Oleo finds a great market in Holland, where it is one of the largest manufacturing interests, if not the most important. The imports of American margarine in 1887 at Rotterdam and Amsterdam amounted to 185,600 tierces against 121,480 tierces the previous year. The aggregate imports at the same places of margarine from Australia, Hungary, France and Russia were almost as much more.

The dog skins so extensively used in America and elsewhere for making gloves, come largely from China. There are thousands of farms in Manchuria and Mongolia where from tens to hundreds of dogs are reared yearly. The dogs are strangled, so as not to injure the skins, being killed in winter when the coat is in the finest condition. Goats are also raised on a large scale for a like purpose.

Honest butter has failed in Germany, which has refused to enact a law to compel the bogus product to be sold for what it is. The chief argument against the desired law was that the oleo was consumed by the poorer classes in place of lard, and competed with it rather than with butter, which these classes had never used. Germany has fifty oleo factories, employing five hundred workmen, and producing a product valued at nearly $3,000,000 annually.

In some of the old leases to English tenant farmers, the landlord is bound to allow a certain discount from the rent for the tenant to spend for agricultural papers. This was a common custom sixty or seventy years ago and it might well be revived there as well as in other countries. It is a not uncommon practice for American farmers to subscribe for extra copies of the AMERICAN AGRICULTURIST for their hired men.

The forests of Europe, omitting Turkey, Bulgaria, Bosnia and Herzegovina, comprise about 710,000 million acres, or about eighteen and a half per cent of the total area, according to an official French estimate. In the United States, about twenty-six per cent of our area is devoted to forest growth. The reckless destruction of forests in Prussia has been so disastrous in its results that the government has issued an edict to protect timber throughout the Empire.

One of the plots at Sir John Lawes' experiment farm at Rothamsted, England, that received a single application of farmyard manure twenty-five years ago and none since, has averaged larger crops every year than the unmanured land immediately adjoining. Only last year there was a difference of four per cent in favor of the land manured twenty-five years ago. Sir John frankly states that he is unable to give a sufficient explanation for this marvelously prolonged effect of farmyard manure.

A hop planters' association has been organized at Canterbury, Eng., to watch all questions affecting the industry and devise some means of competing with foreign hops. It is said that $15,000,000 annually are expended in cultivating the crop, $10,000,000 are invested in curing and storage houses, etc., and 400,000 people are employed in the business. The ultimate hope of the association is to secure a protective tariff. But their immediate object is to secure the marking of foreign hops, as they believe English hops, sold as such, will bring a much better price than foreign.

Danish butter-makers had a hard season last year, owing to the drouth and low prices of butter. But the reasonable prices of grain, and the great increase in union dairies or creameries, enabled them to make a reasonable profit. Better prices are expected, now that the margarine act is enforced in England, especially as the Danish Chambers has enacted a similar measure to guarantee the quality of Danish butter in foreign markets. The average price of best export Danish butter last year was twenty-three cents per pound, against twenty-seven cents as the average price for the past sixteen years.

The phylloxera pest has become dangerously prominent in at least two vine-growing districts of New South Wales, Camden and Seven Hills. The government is sparing no effort to eradicate the trouble, but there has been a serious delay in securing the necessary legislation. Some vineyardists in the affected district desire to be permitted to deal with phylloxera themselves, but the government insists upon the entire destruction of all infested plants. This is a severe remedy, but none too strong, and all will recognize its wisdom should it succeed in protecting the country against the terrible experience of France.

Sheep and wool fairs and sales are a fixture in English agriculture. The flocks and fleeces of several towns or a whole county are brought together at some central point at a stated time, and the different lots offered at auction. Sometimes the sales are very large, and the sellers get the benefit of competitive buyers. The idea might well be adopted, with suitable modifications, in some sections of the United States. At the Dorchester summer sheep fair there were over 10,000 sheep, the competition for which was so active that almost every lot changed hands before noon, and many were unable to buy even at second hand.

The Russian government is making efforts to increase its grain exports. It is proposed to erect large elevators at the principal points of export and railway centers, to handle the grain on the American system. The cost of these elevators will be defrayed by a tax of three-eighths of a cent (half a copeck) on each pood of thirty-six pounds of grain exported. This scheme will probably be authorized by the Council of the Empire this month. The export tax, equal to five-eighths of a cent per American bushel of sixty pounds, will be cheerfully paid, as the new conveniences will reduce the expenses of handling grain by more than that sum.

English as well as American wholesale seedsmen generally send out with their goods a notice in effect like this: "While we exercise the greatest care to supply every variety true to name and of the best quality, yet the conditions of soil, mode of planting and other contingencies which may arise, render it impossible for us to warrant our seeds, or be responsible for any loss which may occur." The validity of this clause has been upheld by every English court where it has been argued, including the Court of Appeal. The English retail dealers and farmers are much exercised over this result, and are combining to carry the case to the court of last resort—the House of Lords.

An agricultural society in New South Wales is criticised for giving $250 in prizes for horse-jumping contests, while the total amount offered for agricultural implements was less than half that. Not less than $175 were given for the best jumping horse, while only $25 was offered for the best collection of implements. "Against this," says a local paper, "they even gave $10 for the best piece of plain needle work. And yet this is called an agricultural association! In the meantime, the government is called upon to pay its subsidy in full to such exhibitions. It is high time that some steps were taken to put these shows on a legitimate footing, and not make them mere farces or race-meetings."

A milk factory owner at Whitechurch, Eng., has been fined for causing a nuisance by allowing the refuse from his factory to get into a drain that ran near the town for two miles. The health officer testified that he had never seen anything worse in any large sewage works. This reminds us of a somewhat similar case in this country, at Amherst, Mass., where one of the most successful co-operative cream-gathering butter factories has been obliged to forsake its original plant and location because of defective drainage, and has just completed a model factory at large expense on another site where perfect drainage is possible. Cream and cheese factories cannot be too particular to secure good drainage.

German farmers have complained bitterly of foreign competition, and to further protect them the tariff on cereals has been nearly doubled. It is claimed by opponents of the policy that this protection has inured to the profit of the large raisers of grain rather than the small farmers who most need to be benefited. Germany has now the highest tariff on cereals of any European country, as appears by this comparison, showing the duty in cents per bushel:

	WHEAT.	RYE.	BARLEY.	OATS.
Austria	19.6	18.3	7.9	5.2
France	26.5	7.4	6.3	8.5
Italy	13.2	14.9	4.9	5.7
Spain	23.0	15.8	13.6	9.0
Germany	32.7	30.5	11.8	14.0
United States	20.0	10.0	10.0	10.0

In Saxony, Germany, where ordinary crops have not been profitable of late years, some intelligent farmers have taken to growing roses with the intention of producing the celebrated attar or oil of roses, which at present is obtained from Turkey, India, and other Eastern countries. It is claimed that roses grown in these more Northern climates have a stronger scent, and therefore have more oil than when grown under a warmer sun. For this reason the oil of lavender produced from plants grown in Surrey, England, brings a higher price than that produced in Provence, France. In the south of France rose fields are made to pay, where, as also at Mitcham, in Surrey, roses are grown for the manufacture of rose water, the more condensed attar not being attempted.

OUR BASKET

Concerning Fowls.—William Koeppen, New York: Black Spanish fowls are more active and fly higher than any of the Asiatic breeds, yet they flourish in confinement, with cleanliness, good care and protection from extreme cold. It is impossible to name any one of the large breeds as the best winter layers. Each breed has its friends. All will lay well in winter, with proper care and feeding, but not without.

Sound Practice.—"My process in marketing not only my fruits but all other crops that I grow, is to have a first-class article, find where there is a good market for such goods, and get hold of good men to handle them, and then deal as fairly and as honorably as I know how to do. By following this process I rarely have any difficulty in either selling or collecting, or in holding my customers after I once get them." This tells in a nutshell the secret of the remarkable success of J. M. Smith, one of Wisconsin's best horticulturists.

Petroleum in the Soil.—H. A. Schuler, Lehigh Co., Pa., asks: "What can be done for a soil saturated with coal oil, to make it productive again?" Can any of our readers furnish a reliable answer?

Marketing Southern Fruit.—J. Van Lindley, of Guilford Co., N. C., writes to the AMERICAN AGRICULTURIST: "In this section all early fruits, such as peaches, plums and apples, are sent to market. Peaches are packed in three-quarter bushel crates. Wild Goose plums are shipped generally in ten-pound baskets, the shipments beginning about July 4. We are within easy reach of Richmond, Baltimore, Philadelphia and New York, where we get good and often fancy prices. Later in the season it doesn't pay to ship to these points, except in October, when we get good prices for our late peaches. It pays well to work the surplus apples into vinegar. The August and September peaches are mostly canned. Drying in the sun and evaporating are both practiced with good results."

Horses in Montana.—Montana Territory is quietly developing a large industry in horse breeding. It has a high proportion of thoroughbred and valuable stallions for the number of horses it contains, including representatives of the best families. Much attention is being given to breeding draft as well as running and trotting horses.

A Mistake of Strawberry Growers.—The aggregate strawberry crop of the present year was deficient in quantity, and prices ruled correspondingly high. This led to the marketing of much inferior fruit, which was packed in the lower tiers of the crates. Such a practice is an actual fraud, which will not fail to react on the market in future. There is danger that the high prices of the season just past will tempt growers to leave their old, run-down beds to produce a crop of inferior berries next year, instead of plowing them under.

Dehorning Calves.—F. D. Grant, Davis Co., Utah: The "buttons" can be removed from the head of a calf by means of a stout sharp pocketknife. The bony core is very likely to grow afterwards, but it may be removed by a saw, at a year old.

Keeping Sheep on Shares.—William J. Camfield, Sargent Co., Dak., writes us that in that Territory and in Kansas the usual methods of taking sheep on shares are as follows: The owner furnishes the ewes and bucks in proper proportions to one who is to provide good shelter, plenty of food, care and protection, shear them and market the wool. The owner pays all taxes, and each party has half the wool, half the increase, and shares equally all losses, except that of old sheep which die from age or from disease previously contracted. Another method is for a man to take a flock to double. He provides proper food and care, pays all taxes, and at the end of three years delivers to the original owner or his assigns as many sheep as were in the original flock, and also an equal number of two and three years old lambs. In some cases it is stipulated that all shall be ewe lambs, but this is manifestly unfair and generally impracticable. The person keeping the sheep during the three years has all the wool and the excess of lambs above the number required to make up a flock twice as large as the original.

Forests in the United States.—As far as the rough estimates at hand will permit a statement, about twenty-six per cent of the total area of the United States appears to be covered by wood growth. It is, however, unevenly distributed. While the Atlantic Coast has about 43 per cent, and the Central and Gulf States have about 50 per cent still under forest cover, the Northern agricultural States—Ohio, Indiana and Illinois—show only 14.7 per cent, the Prairie States 4.4 per cent, the Rocky Mountain Region 14 per cent. These figures may be found in detail in the report of the Department of Agriculture for 1886, page 169.

Canadian Fruit in Foreign Markets.—D. W. Beadle, of the Canadian Horticultural Society, writes to the AMERICAN AGRICULTURIST, with pardonable pride: "Such is the reputation of our apples in the English market that they are always in demand at remunerative prices to the shipper, taking the lead of all other apples sent to that market. The Canadian apple-grower has indeed the inside track now, and if he will only continue to be as honest in his packing in the future as he has been in the past, and send only first-class apples to the English market, he will keep the inside track in spite of all other competition. Some grape growers complain that prices for that fruit are not profitable, but our wine makers think $40 a ton enough to pay for Concord grapes."

An Obstructed Pipe.—H. J. Shallenberger, Juniata Co., Pa., writes us that he has a hydraulic ram operated by the water from an old fish pond. During warm weather the funnel at the head of the inlet pipe is greatly obstructed by vegetable growth in the water. Take an old packing case or other box and cut large holes in the sides and ends, cover the holes with wire gauze, having meshes small enough to exclude the aquatic vegetation. Fit the inlet pipe through one end of the box, so that the end shall remain near the center. The box may be kept down by heavy stones.

Raising and Making Hay.—J. A. Browning, New York: 1. To "render worn-out land fit for producing large crops of hay" would require a system of renovation which would restore general fertility. What is the best method is a question depending largely on local circumstances. If the soil is very light as well as barren no treatment will enable it to yield grass profitably. 2. With a proper soil and a good season two tons per acre would be a fair crop. 3. The cost of having grass cut, made into hay and stored in the barn is five dollars per acre in the region around New York. It is done for very much less on large farms, where the work is a part of the regular operations of the year. 4. An average cow requires about a ton and a half, and a horse two tons of hay or its equivalent to go through the winter. 5. The price of hay in the New York market, like other prices, is variable. An average for any ordinary decade would be about eighteen dollars per ton for bright timothy hay.

Keeping Tomatoes after Frosts.—F. B. Livezey, Howard Co., Md., writes us: There is an old-fashioned plan hereabouts of pulling up tomato vines by the roots, just before the first frost, and hanging them upside down in the cellar. Last season I had fresh tomatoes by this plan for two months after frost, and at the end of the two months had a large lot of green ones to pickle. With a good cellar and a little attention, this plan is far better than that of picking off each individual tomato and laying it in a cold frame.

Strawberries in Vineyards.—A. F. A., Surry Co., Va., writes us: "I propose to plant strawberries between my grapes. The grapes were set this spring, and are ten feet apart. Will it be best to plant one row or two, and keep them very narrow? I shall cultivate with a horse, and don't want anything planted so that I cannot use one." If the strawberry plants are to be kept in hills, two rows may be planted between grapevines ten feet apart, having the rows three feet apart from each other, and leaving three feet and a half from the grapevines; but if the plants are allowed to grow in matted beds, a single row midway between the grapevines will be preferable.

The Grape Crop should be carefully picked, assorted, packed and put on the market in small, attractive packages, and the surplus held in cold storage to insure good prices and fair profits. The inferior bunches of grapes may be worked into jelly and unfermented wine by sealing up hot. "It is almost impossible to find good and acceptable sacramental wine. Much of the adulterated article furnished by our druggists is altogether an imposition; they often palm off upon us the fermented juice of the pie plant." Thus writes George J. Kellogg, of Wisconsin; and T. V. Munson, of Texas, emphasizes the matter in this statement: "Few really pure grape wines can be found in the regular markets."

The Missouri Experiment Station.—The bad beginning made at this institution has been corrected, and the management has been placed in the competent hands of Prof. J. W. Sanborn, who has gracefully accepted this turnabout in affairs, after securing a reluctantly granted release from the Indiana Station, of which he had been previously engaged to take charge. This retention of Prof. Sanborn is a tribute to his worth and an evidence of wisdom on the part of the trustees of the Missouri University and Agricultural College. Let Prof. Sanborn and his co-laborers alone, and the Missouri Station, in connection with the Agricultural College at Columbia, will be a credit to the State.

New Zealand Cheese is gradually growing in favor in the English markets, although its flavor is rather stronger than that of Canadian or American cheese. The business of exporting cheese from New Zealand is as yet in its infancy, as the shipments thus far have traveled mostly as ordinary cargo, with no ventilating or other arrangements to preserve the quality. The fact that a few cases brought in cold storage sold as high as the best American makes, will doubtless lead to providing better transportation facilities for New Zealand cheese, and also for butter, the exports of which are gradually increasing. Lower freight rates have been given, so that the cost of transportation now stands as follows:

	BUTTER. *Cts. per lb.*	CHEESE. *Cts. per lb.*
From New Zealand to London	2	1½
From New York to London	¼ to ⅜	¼ to ⅜

There are charges for "primage" to be paid in the colonies, but the extra charges on American exports will probably about offset this. Thus American cheese can be laid down in London only about one cent, and butter one and a half cents per pound, cheaper than the products of Southern Zone dairies, so far as freights are concerned. Therefore competition from this source is likely to increase.

Trapping Skunks.—Nicholas Chatfield, Orange Co., N. Y., writes us that when skunks become troublesome around the hen-roosts they may be caught in common box traps, without any of the unpleasant consequences which follow more violent means of extirpation. The trap is to be baited with fresh meat, for which the animal has a great liking. When the trap closes in on its prisoner he never discharges his weapon, as he would be the only one hit. In the morning the trap may be carried to a stream and held under water until the animal is drowned.

Fertilizers for Sweet Potatoes.—A recent bulletin of the Alabama Experiment Station reports some experiments with fertilizers on sweet potatoes. Twenty-four plots, as nearly uniform as possible in quality of soil and other conditions, were set to sweet potatoes, and at proper seasons treated with such fertilizers as cottonseed meal, dried blood, sulphate of ammonia, nitrate of soda, kainit, muriate of potash, phosphates, etc. The manures rich in nitrogen produced a luxuriant growth of vine, of a rich green color, but gave inferior results in the production of roots. All the indications point to potash as the most efficient element in plant food for the production of sweet potato tubers.

The Island of Jersey makes a specialty of early vegetables and fruits for the London market,

which is found more profitable by many than dairying. There were 2744 occupiers of land on the island last year, whose holdings averaged about seven and three-fourths acres. Grapes are extensively grown under glass, one hundred and twelve tons having been shipped last year; they are preserved in houses lined with sawdust to keep out the frost, and their freshness is maintained by keeping the stems of the bunches inserted in bottles of water. Tomatoes are another great crop, of which fifty thousand dollars' worth are annually sold. Early potatoes, however, are the principal crop, the Jersey tubers being usually the first in market. Nearly one-fifth of the whole island is devoted to potatoes, which yield from eight to ten tons per acre, and sell at from twenty to forty dollars per ton. The average cost of production in 1887 was $237 per acre, the average return being $360, or a profit of $123 per acre. The usual profit is between forty and fifty dollars per acre. Myatts planted in January are ready to dig in May, and are followed by Early Royal Jersey Fluke and Prince of Wales. The land is prodigiously manured, sea-weed and stable manure being much used, and guano is applied four or five times as liberally as on the Continent.

Peach Vinegar.—Vinegar can be made nearly or quite as well from peaches as from apples by simply pressing the fresh ripe peaches without any preparatory grinding, after which the peach cider can be treated the same as that made from apples. An inferior article is also made in the South by letting the peaches thoroughly ripen, not to say rot, in barrels prepared for their reception in such a way as to allow the juice to run off into buckets. The latter method, however, is in vogue only by such as are averse to a "waste" of manual labor. While better than none, it produces a vastly inferior article to that made in the proper way, as first described. G. L. TABER, Baker Co., Fla.

Draining a Swale.—Charles D. Thayer, Worcester Co., Mass., writes that he has, in a recently acquired farm, about four acres of low, wet land which he desires to reclaim, and asks for the best method. As there is a fall of two and a half feet for drainage, the problem is easily solved. Tiles make the cheapest permanent drain, unless there are stones on the place which it is desirable to bury out of the way. There is no danger that the muck taken from the drains will spread foul weeds if it is used to fertilize high ground, for such aquatic and semi-aquatic plants as once grew on it will not flourish in upland situations.

Exhibition of Missouri Fruit.—The State Horticultural Society of Missouri announces that it has completed arrangements for a display of Missouri fruits by counties, at the coming St. Louis Exposition, which opens September 3 and continues until October 20. The finest room in the great Exposition building has been secured for the purpose, and will be decorated by the State society, which will also furnish plates and other accessories. The respective county displays will be arranged with every advantage for the best possible show. This laudable movement should receive the hearty co-operation of Missouri fruit growers, and result in a grand display worthy of Missouri.

Austrian Fruit Exhibition.—A grand exposition of fruits, machines and implements used in fruit raising and competitive trial of fruit dryers will be held in Vienna, September 20 to October 7. The competition in fruits and implements is restricted to the empire, but that in fruit driers is open to the world. Ten cash prizes and medals are offered for driers of various sizes and capacities.

Securing Straight Combs.—If the combs are too thick, and there is no brood in them, they may be shaved down to seven-eighths of an inch, then removed so as to be an inch and a quarter apart from centers. This stimulates brood rearing and storing honey above the brood combs. To prevent crooked combs, use a following board between them, or use dummy frames. When four or five frames of straight comb are secured, insert empty frames between them, and thus secure straight combs all through.

WILLIAM MORRISON, South Carolina.

Treatment of Grapevines.—P. B. Hunt, Iowa, has about 100 vines, mostly Concords, planted eight feet apart. He proposes to cut each alternate vine to the ground this fall, and thus alternate, one year growing wood on one half of the vines, and on the other half grow fruit. Mr. H. asks our opinion of the proposed plan. We can not see that any thing can be gained. We can not give our reasons without a longer article than we can now spare room for. You grow a frame-work of wood upon which to hang a crop of fruit; by cutting that away, as proposed, you can not produce another such frame-work in a single year. If the object be to get more and better grapes, this can be done by controlling the number of clusters to be borne on each vine, without cutting the vine quite away. Each bearing shoot, as it starts in the spring, will show the buds for (usually) three clusters; if each shoot is allowed to bear but two or even but one cluster, by pinching off the others, the fruit remaining will be improved in quality. This might be carried still further, and after the grapes have set, a large share of the berries upon each cluster may be thinned out, using scissors made for use upon grapes under glass, to the great improvement of those allowed to remain and ripen. We do not advise this treatment, we say it "may be done;" but when Concords retail at three cents a pound in our city streets it can not pay. Of course, the proper treatment of your vines will depend upon what has been their former treatment. If you have a number of well established vines, pruned on any of the approved "systems" or "methods," all of which provide for a renewal of bearing wood every year, without cutting away the whole vine every other year, our advice is to so prune the vines as to get the best results from them. You say that you "know but little if any thing about pruning the vine." Your best plan would be to procure some standard work, such as Fuller's, Hussman's or any other in which the first principles are taught, and make a study of the manner of the growth and the fruiting of the vine. This is very simple and when once understood, can be applied to the treatment of his vine by any intelligent person.

Cooling Milk.—M. Schade, Beaver Co., Pa.: The most convenient appliance for keeping milk cool, while distributing it to customers, is one of the jacketed cans which are sold by the principal dealers in dairy supplies. Some of these cans are provided with an outside ice-jacket, others with a receptacle for ice inside. In either case the ice cools the milk without coming in direct contact with it.

A Double Pansy.—T. White, Broome Co., N. Y., sends us a very neat sketch of what is to him a novelty, a double pansy. It is not double in the usual way in which flowers are doubled—that is, by an increase in the number of petals and other parts of the flower, but is more properly a twin flower, produced by the growing together of two single flower stems, leaving the two flowers distinct. This union of two or more parts that are usually distinct is termed *fasciation*. It often produces monstrous asparagus stalks, and by the union of the stalks of the individual flowers with the main stem produces some "lovely monsters" among lilies. It often occurs among fruit; twin cucumbers, grown together their whole length, are not rare. We have known a cherry tree with a large share of its fruit in pairs. Twin apples thus united occur every now and then. Such freaks, while interesting, are seldom desirable.

American Veterinary College.—Organized in 1875, under great difficulties, this college has by persistent energy, gradually grown to be to-day one of the most important institutions of the kind in the country. Its facilities and opportunities for teaching are of the best, the board of professors consists of men that have grown old in the work they have done for more than twenty years. The clinical material here offered to the students is enormous and the unequaled opportunities for practical studies are eagerly taken advantage off by them. Its matriculating classes counts now nearly one hundred and fifty students, its alumni association, which increases every year, is spread all over the country and forms more than one-third of the regular veterinarians in the United States. Of the two hundred and sixty-eight graduates who fill the pages of the official register of the college, more than fifty are now occupying government or State positions, or filling professorships in agricultural and veterinary institutions. It is with pleasure that in acknowledging the receipt of the circular of the college for the coming session, we take this opportunity to call the attention of our readers to this institution and to recommend young men, desirous to enter the veterinary profession, to read the new announcement when they are considering the subject of selecting the school to enter. Apply for the circular to the Dean, Dr. A. Liautard, 141 West 54th Street, New York.

A New Poultry Standard.—The Secretary of the American Poultry Association announces that a new and revised Standard of Excellence will be published about the 15th of September.

Remarkable Progress in Horticulture has been made in Nebraska of recent years. In Jefferson County alone there are nine nurseries employing over one hundred men, and with annual sales amounting to $225,000. We find that the whole State has nearly 150 nurseries, according to an official report. The first summer meeting of the State Horticultural Society, held at Fairbury in July, was largely attended. It was shown that fruit would thrive in all the region between that locality and Denver, Col. An interesting address was given by J. H. Masters, who planted the first orchard in the State, which has now grown twenty-nine crops. The Concord is still the first choice of grapes for Nebraska, next Moore's Early, Agawam, Elvira, and California Seedling.

A Choice Variety.—"We have had snow in harvest, an Arctic temperature in mid-summer, and a November frost in July." This is the way in which *Bell's Messenger* sums up the weather in England for July.

The Fruit Crop Reports gathered by the *New England Homestead* the middle week of August confirm the earlier expectations of an enormous yield of grapes in all sections, a remarkably short crop of pears, a curtailed yield of plums, and a full crop of peaches where commercially grown, including Delaware and Michigan. High prices are considered certain for pears and plums while peaches and grapes will fetch fair values. The apple crop on the whole is considerable less than two years ago in the great shipping regions. It is good in the shipping sections of Maine and New Hampshire, but seriously short along Lake Champlain, fair in Massachusetts, and very short in Rhode Island and Connecticut. The New York crop is much below the average, except in the great apple belt along Lake Ontario, embracing Niagara, Orleans, Monroe, Wayne and Oswego counties. Here the yield of fine Baldwins will be enormous, though Greenings and Russets are short. Further West, in the great apple belt of Western Michigan, the crop will be curtailed more than 50 per cent. No contracts for winter apples had been made at the date of the report, but $1.25 to $1.50 per barrel had been suggested for the crop at the farm or local depot. *The Homestead* believes the values of the last even year crop, in 1886, will be maintained, which were $1.87 to $2.25 as the average for the season at Boston and New York. The crop is short in England and on the Continent, and the export demand will probably be active at reasonable prices. The exports will probably reach from 900,000 to 1,000,000 barrels against 808,000 barrels in the season of 1886.

A Note of Thanks.—Allow me to extend congratulations and thanks for the merited tribute of respect given in an article in the August number of the AMERICAN AGRICULTURIST, to our good friend Ephraim W. Bull, originator of the Concord grape. A. B. HOWARD, Belchertown, Mass.

As to Seed Corn.—"I must say the articles on the subject in the AMERICAN AGRICULTURIST, especially in the August number, were excellent," writes C. N. Pinney, Le Sueur Co., Minn. "A neighbor of mine might well afford to pay for the paper for these articles alone. He planted his corn over three times last spring, and then got a poor stand, and I doubt if he has any corn to harvest. It was all owing to his slip-shod way of saving seed. There is nothing that will set a farmer back so quickly as poor seed corn. And yet how few farmers give the necessary attention to this work."

Conference of Dairy Farmers.—The Ontario Creameries Association has arranged for a series of meetings in the dairy tent on the Provincial Exhibition grounds, Kingston, September 12 and 13. The programme embraces subjects of vital interest to farmers and dairymen.

AMERICAN AGRICULTURIST
FOUNDED IN 1842

SEPTEMBER, 1888.

The Most Profitable Land on the Farm.

We have all heard of the profitable results of reclaiming low, mucky land and converting useless swamps into onion farms or celery grounds. There are millions of acres of similar land. It is not every man who has the experience and other necessary qualifications for success in growing these and similar crops, but what of that? Must these rich alluvial lands or swamps be allowed to produce forever nothing but weeds, rushes and brambles, with here and there a few patches of coarse grass? There are many methods of reclaiming such land. We purpose to allude only to the familiar one of seeding them down to timothy grass for hay or to timothy, red-top and blue grass for pasture.

Where it is possible, the first and most important thing is to drain the land. For want of an outlet this cannot always be done thoroughly, but it is seldom that land is so flat that much of the water cannot be drawn off by a few wide, open ditches. It is far easier work to drain such soils than hard upland that needs underdraining. Not only is the muck light and easily dug, but fewer drains are necessary. As a matter of experience, we find only two things that give much trouble—the roots of trees and the hard pan. In regard to the roots, it will be found that they give less trouble than may be feared, because on such wet, mucky land they are all on the surface. The hard pan on such land generally looks like clay or slate, but it is not clay. It is almost impossible to force a spade into it vertically; but it can easily be split or broken up horizontally. In many cases a plow will split it apart and break it up, and it can then be easily shoveled out.

The weakest link determines the strength of the chain; and the shallowest and narrowest part of a ditch determines its capacity to carry water. It often happens that a ditch will be dug wide and deep where the digging is easy, but where the hard pan comes near the surface the ditch is left shallow. It is here that every inch you gain in depth counts. If you can get the plow in, it will be very desirable to make these hard spots the deepest part of the ditch, because on the soft, mucky part the rush of water in the spring will have a tendency to make the ditch deeper and wider, while it will have no effect on the hard spots.

It is not our purpose at this time to go into the details of draining. We would rather urge our readers who have such land, now producing little of any value, to make a beginning in the way of improving them. In a dry, hot climate these lands are enormously productive, but what the product shall be, whether weeds or good grass, is for each owner to determine for himself.

The New Public Lands Bill.

This measure is clearly a forward step. If it becomes a law, the act will tend to prevent fraudulent appropriation of what remains of our once vast public domain. Applying the homestead features, as far as practicable, to all agricultural and desert lands—which require actual settlement for a considerable period as a prerequisite to obtaining titles—will place the land in future in the hands of actual home seekers in small quantities. All this must check the tendency to large holdings, which has until recently existed and which is so dangerous to the perpetuity of the government. The reservation of title to coal deposits in the government, with the right to assume control of them at any time to prevent monopoly, is in accord with a growing public sentiment. The idea of obtaining revenue from the disposal of the lands, which in the early history of our country was considered so important, is largely abandoned by this bill. This particular feature will meet the opposition of some economists, but it is certainly better that the government dispose of its lands in small lots to bona-fide settlers than that it should reap a larger immediate revenue by selling at a higher price to capitalists or speculators. The latter are not the classes that will settle upon and develop our public domain. That is beyond question a wise policy which, instead, gives preference to the actual settler. While the bill is open to criticism in several details, it is in the main well adapted to the ends for which it was devised. It has passed the House and now awaits the action of the Senate.

The Wastes of Fruit.

It may seem a strange assertion, but we really believe that it would be well for many fruit growers in the country if their orchards could be laid waste and their trees converted into firewood. A large share of the orchards now in bearing were planted by others than the present owner. When the pioneer cleared the land he felt that he must have an orchard; what for he could hardly tell. The papers all said that he should plant fruit trees, and the neighbors said that the place, when it came to be sold, would bring a great deal more with an orchard upon it. The inexperienced pioneer has had no thought of selling his place. He has just gained a home for his family, and has no intention of selling. The tree vender comes along; the settlers know nothing about fruit, save that there are sweet and sour, early and late apples. If the settler does not know anything about fruit this man does—how much he does know! And if one does not believe what he states, then he has a book of highly colored plate pictures to show. It always results the same way. The settler purchases twice as many trees of twice as many kinds as he needs, and at an outlay that cannot well be spared.

About the time the trees come into bearing, the pioneer, who thought he would sell out, disposes of his farm to one who is about as ignorant as he was when he began. He finds he has an abundance of fruit, but somehow it does not seem to be as good fruit as that which he used to buy by the barrel at the East. To this present owner there in due time then comes a tree seller, and as full or fuller of knowledge of trees, and books bigger with fruit in colors ever so much brighter than the other. "That man," says tree-seller No. 2, "was little less than a fraud to sell you apples suited only for New Jersey and New York to plant up here in Northern Illinois, when you only want the real iron-clad sorts. Leave it to me, and I will give you a lot of trees that might be planted at the North Pole." An order is given for more trees, nearly of the same sorts that are already in the orchard, but as the trees will not bear in five or seven years it will make no difference, and by that time the labels are all lost and if any record was made of the trees it has been lost. In this way the farm may change hands again, and many orchards in the country which are in bearing this year, though large and thrifty, are filled with all sorts of trees, which were planted by two or three persons without knowledge of fruit or any idea of what use the fruits were to be put to. Many orchards were planted by former hands, and it takes the present owners two or three years at least to find the names of the kinds, and, provided the trees are true to the names, their kinds are quite worthless, and, as we asserted, the owners would be better off were their trees converted into cord wood.

Why now graft them anew? will be asked. There is something to say on both sides of that question. At present at least the older parts of our country are full of orchards the fruits of which are useless for shipping in the usual way, fresh in barrels, and there is a vast amount of fruit which in years of plenty presents the owner the problem: How can it be kept from going to waste? There will be much consideration over these problems. The principal method of saving the surplus of fruit which cannot be shipped as barreled fruit, is dried fruit—the old fashioned sun-dried fruit, which is preferred by some, though its sale is greatly diminished by the evaporator. The superior cleanliness and appearance of all evaporated fruit establishes it at once. There are many kinds of evaporation. All of them require an outlay. Some, if not all, may be used for berries and peaches as well as tomatoes and green corn, as well as other vegetables.

The next method is canning, but a canning factory can rarely be profitable if confined to one article. Apple butter, cider or apple jelly may be made at home, with the apparatus upon the farm, but evaporators used for maple or sorghum syrups are vastly better for jellies, etc. The consumption of these might be largely increased. Then there are cider and vinegar. There is much to be said about all of these expedients to dispose of waste fruit. We hope to discuss some of them later.

Educate the Hand.

"Manual labor by students is a very minor consideration in all American agricultural colleges." This point was reiterated and emphasized by G. W. Atherton, President of the Pennsylvania State College, in some remarks before an English committee on technical education, at the Spencer House in London, on the 8th of May. If Mr. Atherton is correctly quoted, he certainly overstates the case, for our best agricultural colleges insist

upon manual labor by their students. Indeed, this is in one sense the key-note to agricultural education. For instance, the Michigan Agricultural College, perhaps the most successful in the country, obliges every student to work. It has no preparatory courses, no side courses, no short courses, but confines it whole efforts to two full four-year courses, one in agriculture and one in mechanic arts. The students in agriculture work on the farm, in the garden or on the grounds, while those in mechanic arts labor in the shops, and this labor is required as promptly and regularly as the class-room exercises. The result is that the Michigan institution is, in a large degree, a model of its kind, and so overcrowded with students that a new dormitory is to be built to accommodate them. The AMERICAN AGRICULTURIST enters an emphatic protest against the position President Atherton is reported to have taken, nor does his position accurately present the sentiments of our land-grant colleges. His idea, if carried out, would certainly educate the boys away from the farm, and would belittle labor, whereas the instruction in our industrial colleges should dignify honest labor of whatever kind. Earnest workers with trained hands and eyes, as well as with educated brains, are needed in agriculture and similar pursuits. The land-grant college which loses sight of this fact, will ultimately fail to carry out the purposes for which it was established.

Surplus Products of American Agriculture.

The United States census has never attempted to enumerate and value all the forms of agricultural productions, but the Department of Agriculture has made an attempt in this direction, and from its last report is deduced the chart herewith given, showing, approximately, the production and exportation of our surplus products at their farm value. The average surplus exported is only about ten per cent of the value of all our immense production. This is a much smaller proportion than is usually supposed, yet it is marvelous that this country should export even ten per cent of its agricultural products, considering that it has to supply with great liberality the wants of more than sixty millions of people. If we exclude the exports of cotton and tobacco, only about five per cent of our agricultural products are exported.

The values quoted are the values of the products on the farm. They represent what the production is worth to the farmers. So, too, the values which are given to the exports of the crops of 1886, are not the values of the seaports, but of the farm. Statistician Dodge rightly holds that it is unfair to compare the exported products with the whole production on a different basis of value for each. Thus the seaport value ($483,834,128) of our agricultural exports for 1886 exceeds their farm values by nearly $100,000,000. On a similar basis, the agricultural exports of 1887 are believed by the same authority to have a farm value of only about $400,000,000. Adding to the agricultural imports, the cost of ocean transportation, commercial charges and profits, with whatever of undervaluation may exist in import prices, Mr. Dodge believes the actual value of our agricultural imports will reach $350,000,000 annually. This leaves an annual export balance in favor of American agriculture of some $50,000,000.

This is a far smaller proportion than is usually estimated by those who patriotically claim that agriculture furnishes seventy-four per cent of American exports. These same enthusiasts fail to note also that forty-one per cent of our total imports are agricultural products. Therefore, the United States agricultural exports exceed her agricultural imports only about forty-five per cent, on the basis of seaport values, such as are commonly used in statistical reports. No one can dispute this statement, however much he may criticise Mr. Dodge's estimate above, for it is proved by these official figures:

COMPARATIVE STATEMENT OF FARM PRODUCTS, EXPORTS AND IMPORTS.

	Farm Values in 1886.	Exports.	Imports 1887.
	Products.		
Bread and breadstuffs	$1,167,161,910	$100,718,318	$ 6,630,228
Animals and their products	380,000,000	8,124,480	39,596,810
Vegetables and fruits	355,241,940	2,947,482	25,958,389
Hay, clover and grass seed	308,437,699	769,133	20,608,496
Tobacco and hops	252,582,118	37,857,511	13,191,614
Cotton	257,000,000	177,857,511	2,191,614
Wool (raw)	71,000,000	70,302	16,424,479
Miscellaneous	19,000,000	129,103	9,936,238
Sugar and molasses	33,500,000	None	83,766,689
Tea, coffee and cocoa	None	None	74,789,414
Totals in 1886	$3,727,218,994	$374,230,603	$287,542,266
Seaport value of agricultural exports in 1886		$483,834,128	
Total agricultural exports in 1887		$520,820,750	
Total value of agricultural imports in 1887		350,000,000	
Real value of agricultural imports in 1887		350,000,000	
Agricultural exports actually exceed imports only about		$50,000,000	

NOTE—Making all necessary allowance for unenumerated products on one side and duplications on the other, it is assumed that the net agricultural production of the country amounted in 1886 to $3,600,000,000 in round numbers, and possibly to the full aggregate shown by the chart and table.

STATEMENT FOR FISCAL YEAR ENDED JUNE 30, 1887.

	Exports.	*Imports.*
Total of all kinds	$703,022,923	$692,319,768
Agricultural products	520,820,758	287,542,266
Per cent agricultural	74	41

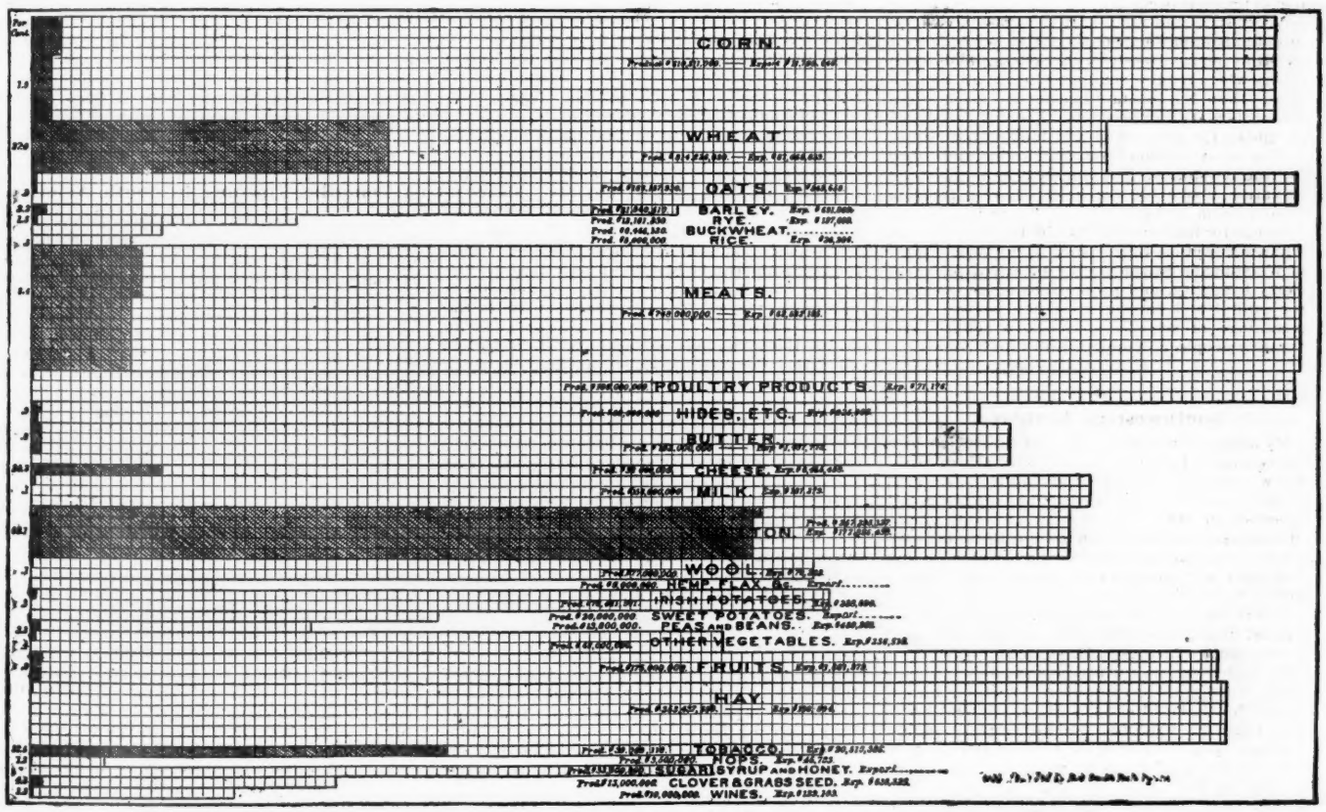


CHART SHOWING PRODUCTION AND EXPORTS OF AMERICAN CROPS.

[*Scale, $500,000 to each square.—The shaded parts indicate the proportion of the crops of 1886 that were exported.*]

FROM NEAR AND FAR.

The Outlook in Northern Montana.

This is written from a new region, being part of the Indian reservation that was recently thrown open to settlement. It is destined to become a great agricultural region. Unfortunately when the bill was signed by the President it was too late for settlers to prepare the ground and put in crops this year. Little has been done, therefore, save to secure a supply of hay. The region has many advantages. First, there is an abundant supply of coal, which crops out all along the streams. Then, we are near a rich mineral region, which will always furnish a ready market and good prices for surplus farm products. Thirdly, the snowfall is never heavy and is rapidly melted away by the warm Chinook winds. Cattle are never fed here and always come out fat in the spring. The railroad is doing quite a lively business in hauling buffalo bones, which are found whitening the ground and are picked up and carried to the railroad stations by the Indians. They are bought up and shipped East for making fertilizer and use in refining sugar. All the broad area was thrown open to settlement by homestead and pre-emption. It offers a tempting field for those who are not afraid of work and are willing to endure for a time the privations of pioneer life, but is no place for any who expect to come and pick up golden nuggets. Neither can a man with a family and no capital expect to do as well at first as those who bring stock and sufficient resources to provide for themselves until a crop is secured.

W. M. WOOLDRIDGE, Dawson Co., Mon.

The Piedmont Region in North Carolina.

Forsyth County lies in the northwestern part of North Carolina, in the Piedmont region, which extends from Maryland to Florida. The Yadkin River washes its western boundary, and there are numerous other streams flowing through the broad rich bottoms which lie between the gently rolling hills. The soil is red clay on the higher uplands, and dark loam in the valley. With the proper use of fertilizers most of this land yields good crops of cotton, corn, small grains, forage crops, fruits and vegetables. For stock raising and dairying, this region presents peculiar advantages, as the winters are very short and mild. All the grasses, clovers, millet and other forage crops of the North, as well as Millo maize, teosinte, lespedeza, and some others which require Southern climate all flourish here. There is a constant market and good prices for meats and dairy products. There is abundance of timber for fuel, shade and lumber, pure water and total exemption from hurricanes and other destructive storms. The climate is salubrious, the elevation above the sea level securing freedom from malaria and great heat. There is a hearty welcome for industrious, law-abiding people, from whatever section they come. The "twin cities" of Winston and Salem are the principal places of Forsyth County, and present attractive openings for capital and enterprise. They possess every advantage of schools, churches, a refined and friendly people, and opportunities for business.

C. A. HEGE, Forsyth Co., N. C.

Southwestern Louisiana.

My attention was first called to this region by a convention at Lake Charles just before Mardi Gras, a few years ago. I came expecting to see a region of swamps and bayous, inhabited by alligators and moccasin snakes. I found instead a lovely prairie stretching away southward to the Gulf, and bounded on the north by heavy forests of valuable timber. I afterwards came to stay, and this is my second summer in Calcasieu Parish.

The soil is a clay loam, which produces all the grains, vegetables and fruits of temperate and sub-tropical climates. These include corn, oats (the winter variety), wheat, cotton, tobacco, peanuts, sweet potatoes, and every vegetable known in the North, besides many which are peculiar to this latitude. Of fruits, peaches, oranges, plums, quinces, pears, nectarines, persimmons, grapes, and berries of all kinds do well; but it is not an apple country. Still, the great natural crop is grass. Bermuda grass yields largely on the rich bottoms, and on higher ground an indigenous paspalum, called by the French name of "gazon," makes a dense sod, and is relished by stock of all kinds. Cattle and horses find abundant forage for ten months in the year, and if given access to the salt meadows on the coast will do well there during the remaining two months.

The climate is warm in summer, mild in winter, and simply delicious in fall and spring. The heats of summer are tempered by bland breezes from the Gulf, and the nights are cool at all times. The best time for a Northern man to come is in the winter months, so as to become acclimated before the warmest season. There is a welcome here for enterprising men with capital enough to start with. There is a little government land yet open to entry as homesteads, but this is mostly taken up. Good land can be bought at five to ten dollars an acre.

H. L. HALL, Calcasieu Parish, La.

Cannery Men Wanted in Washington Territory.

Fruits and vegetables do remarkably well in our territory, but slip-shod work, weeds and orchards combined, do not pay an interest on the investments. Here as well as elsewhere it pays a good profit to do well what we undertake. We are looking for some experienced cannery man to come here and locate. He will wish he had not waited so long. The last winter blizzards have given an impetus to our glorious land, where people live, not vegetate. Time will bring an equilibrium, and we will outflow like Moody's great gathering, because we will not be able to house all who come, but that time is not yet. Immigrants are coming in to enjoy the wonderful mild winters we have enjoyed for forty years. Zero and below? No, not here. I had a Dwarf Japanese Mandarin orange tree (just from Japan last year) making a fine growth during our coldest weather, and I let my fire go down every night. Go back to the East? Not just yet. Our winter weather is "just splendid;" not cold, nor yet too warm. Spring weather, just right for farming; and all the year round just right for old folks and invalids.

C. W. SHANE, Clarke Co., Wash. Ter.

Progress in West Virginia.

There is marked development in this State. Farmers are gradually getting new and improved kinds of machinery, and we look for wonderful changes in the near future. Farms that can be bought now for nominal figures, almost, will in the next five years increase in value with remarkable rapidity. This country wants more energetic and practical farmers, and if the people in the Northern and NewEngland States who contemplate securing new homes would come to West Virginia they would be more than pleased, and could secure the very best of homes, near to good markets, schools, churches, etc. The climate is very healthy, and all cereal crops do well. There is abundant timber for manufacturing and shipping purposes. There are many saw mills now cutting lumber. The mountains here furnish the very best of yellow and white pine, oak, hickory, ash, walnut, etc. Lands are cheap and can be bought on easy terms. This section was set back by the civil war, and now a new era is evident. There is great increase in the live stock interest. The farmers are beginning to realize the advantages of better classes of stock of all kinds. For sheep raising I am sanguine there is no better place than our mountain farms. All kinds of fruit do well, and farmers are beginning to pay considerable attention to their orchards. During several past seasons there was an unusual number of guests at our summer hotels, and from present indications it will be necessary for our hotels to increase their capacity. Sportsmen find plenty of game here from the bear to the squirrel, and the rivers and creeks abound in bass, trout, carp, perch, etc., and afford the finest water powers in the world.

ROBERT L. SECHRIST, Hampshire Co., W. Va.

The Season in Minnesota.

Farmers as a rule are very much encouraged and feel highly elated over the bounteous harvest and an advance in prices for their produce. Trade in all lines is already feeling the stimulus of quickening activity, and it can safely be said that the sun does not shine on a fairer spot than the velvet green-covered prairies and flourishing fields of Minnesota. The timothy and clover crop in this State is one of the largest known for years. Flax also promises a good yield and the acreage is quite large. The tract of country infested by grasshoppers covers about four townships in the northwestern part of Otter Tail County. They first appeared there some three or four years ago, and have bred from season to season until this year, when they appeared in alarming numbers. They are pronounced by State Entomologist Lugger the true Rocky Mountain locusts. The chinch bugs are getting more numerous each year in this State and are doing considerable damage to grain. In Zumbrota township and for a considerable distance along the Zumbro River valley, the chinch bugs are doing much damage. In fact, in nearly all portions of the county, the bugs are working largely in the barley, as the acreage of wheat is much smaller than usual. On the Sand prairie in Pierre Co., Wis., opposite Red Wing, and from Red Wing up the valley of the Cannon River, across the whole breadth of the county, chinch bugs are doing a vast amount of damage. Many fields of barley were plowed under and buckwheat sowed instead. But as a whole, farm crops will yield as well as last year; in fact, the general result will probably be somewhat better, for a large number of farmers have engaged in diversified farming during the year, and have turned their attention to a considerable extent to stock raising, so that, if the chinch bugs damage their crops to any great extent, they will not be left entirely destitute. W. B. COVERT, Mower Co., Minn.

Free-hand Sketches from Pennsylvania.

My garden this year is the best I have ever had. Of the five varieties of potatoes the Burbank turned out the best. We began using Early Sunrise and Beauty of Hebron on the 7th of June.

I have just finished a month's riding among the farmers in a strange township. The cheese factories, creamery, barns and well-worked fields were full of interest; but it was unpleasant to find the roads without names. The few roads which did not need them had names. They were the cross roads, and those out on the new sections, that needed titles but lacked them.

Some forty years ago a house and outbuildings were erected in this county. Five years ago a friend purchased the place, and I recently spent a few days on the property. The yard slants toward the road. The privy vault is twenty-five feet back of the house. It is the receptacle of chamber slops and is used by half a dozen people. It has never been cleaned. The odor is terrible, and evenings the air for rods around it is poisoned. The well is within fifty feet but seemed to be pure. My vault at home is no more. Several years ago I cleaned it out and filled it up; got three tobacco pails, tarred the insides and used road dust for awhile, but on reading that sawdust was better I tried it and found it so. I empty the pails once a month.

ORVICE SISSON, Erie Co., Pa.

A Tempting Opening in South America.

Mr. John Caudwell writes us from Quino, Chili, that the region around that town is rapidly filling up with English settlers. The government encourages immigration, giving the land free and furnishing every settler with a yoke of oxen, plow, cart, and enough lumber to build a small house, to be paid for in five years without interest. One stipulation is that every farm shall be inclosed with hedges, ditches or stone walls. There is a great scarcity of osage orange, and other hedge plants. There is an attractive opening here for a good nurseryman and seedsman to supply osage and other plants and seeds. Nursery stock and trees grow finely. The climate is much like that of California.

American Implements Needed in South Africa.

Our principal crops here are corn (we call it mealies) and oats, mostly cut green for fodder. The method in vogue here for planting Indian corn is for a Kaffir to follow the plow, dropping the corn in every third furrow. The result is far from satisfactory. The Kaffir plowman does not make straight furrows, the corn is trampled upon by the oxen the next time round (and there are sometimes ten of them of which five go in the furrow), and thirdly the seed is planted at unequal depths. What we need is some improved appliance which would do enough work to justify the employment of white labor. Our climate is dry, and manure rots slowly. It should be made fine before spreading and a good manure spreader would be a boon to Cape farmers. E. S. B., Natal, South Africa.

MELLIN'S

FOOD

FOR INFANTS AND INVALIDS

TRADE GRAVE-LABORA MARK.

The only perfect substitute for Mother's milk. Invaluable in Cholera Infantum and Teething. A pre-digested food for Dyspeptics, Consumptives, Convalescents. Perfect nutrient in all Wasting Diseases. Requires no cooking. Our Book, The Care and Feeding of Infants, mailed free.
DOLIBER, GOODALE & CO., Boston, Mass.

Many women find Pyle's Pearline

Indispensable for washing dishes, windows, carpets, cleaning house, etc.; but because of its wonderful cleansing properties are afraid to have their clothes washed with it. Well, in the past ten years the consumption of Pearline has exceeded 150,000,000 packages, and no complaints, but numerous letters praising it. Why? Because PEARLINE is absolutely harmless in its place, and one of the best places to put it is in the washtub. You can soak your finest linens and laces in Pearline and water for a month with perfect safety. That's as much Pearline as they would get if they were washed in it once a week for twenty years. We could not afford to spend our time and money in telling the public, through the newspapers, a single thing about Pearline that would not stand the test. Pure and harmless as the finest imported Castile soap. Its success has brought out many dangerous imitations; beware of them.

JAMES PYLE, New York.

THESE are in every respect strictly first-class Paints, composed of pure linseed oil and the highest grade of pigments. They are prepared ready for the brush, in 54 newest shades and standard colors, and, on account of their purity and great covering properties, we offer them as the MOST DURABLE and ECONOMICAL Paints ever produced. One gallon will cover from 250 to 275 sq. ft., two coats.

Samples and Descriptive Price List free by mail.

H. W. JOHNS MANUFACTURING COMPANY,
SOLE MANUFACTURERS OF
H. W. Johns' Colors in Oil, Liquid Coach Black, Asbestos Roofing, Fire-Proof Paints, Building Felt Steam-Pipe and Boiler Coverings, etc. Vulcabeston Piston Rod Packing Rings, Gaskets, etc.

87 MAIDEN LANE, NEW YORK.
Chicago, Philadelphia, London.

PEERLESS DYES Are the BEST. SOLD BY DRUGGISTS.

A COMMON-SENSE REMEDY.

In the matter of curatives what you want is something that will do its work while you continue to do yours---a remedy that will give you no inconvenience nor interfere with your business. Such a remedy is ALLCOCK'S POROUS PLASTERS. These Plasters are purely vegetable and absolutely harmless. They require no change of diet, and are not affected by wet or cold. Their action does not interfere with labor or business; you can toil and yet be cured while hard at work. They are so pure that the youngest, the oldest, the most delicate person of either sex can use them with great benefit.

Beware of imitations and do not be deceived by misrepresentation.

Ask for ALLCOCK'S, and let no explanation or solicitation induce you to accept a substitute.

B. F. BROWN & CO.
BOSTON, MASS.
Highest Award and Only Medal for Shoe Dressing, etc., at Paris Exposition 1878.

Satin Polish

French Dressing

BEWARE OF IMITATIONS.

None Genuine Without Paris Medal on Every Bottle.

HIGHEST AWARD NEW ORLEANS EXPOSITION AGAINST ALL COMPETITORS. A SILVER MEDAL.

TOWER'S TRADE FISH BRAND

None genuine unless stamped with the above TRADE MARK.

SLICKER Is The Best Waterproof Coat Ever Made.

Don't waste your money on a gum or rubber coat. The FISH BRAND SLICKER is absolutely *water* and *wind* PROOF, and will keep you dry in the hardest storm. Ask for the "FISH BRAND" SLICKER and take no other. If your storekeeper does not have the "FISH BRAND", send for descriptive catalogue to A. J. TOWER, 20 Simmons St., Boston, Mass.

WHITMAN'S NEW PATENT REBOUND PLUNGER PERPETUAL

Guaranteed superior to any Lever Press now made for Hay, Straw and Wool. Always victorious. Received First Premium at all prominent fairs for past five years, over Dederick and others. Illustrated Catalogue Free. WHITMAN AGR'L CO., St. Louis, Mo.

Also manufacture the Best Steam Press made in America.

"JONES HE PAYS THE FREIGHT"

Scales of all Sizes. 5 Ton Wagon Scale with *Brass Tare Beam and Beam Box, $60. For free Price List of all kinds, address*

JONES OF BINGHAMTON,
BINGHAMTON, N. Y.

CLARK'S ROOT CUTTER.

Acknowledged by all stock raisers to be the only perfect Root Cutter.

Send for New Circular.

Higganum M'f'g. Corporation,
Sole Manufacturers,
Higganum, Conn.
Warehouse, 38 So. Market St., Boston, Mass. Send for our general list of Implements.

BELLE CITY Feed AND Ensilage CUTTER.

Farmers know that feeding Ensilage increases profits, and we ask you to send for our Illustrated Catalogue and Price Lists before buying a cutter. All sizes. Silo and Ensilage treatise FREE. Belle City Mfg. Co., Racine, Wis.

OHIO ENSILAGE AND FEED CUTTERS

More substantial. Easier to operate and less liable to accident than any other cutters.

With or without Carriers.

IMPROVED for 1888.

Our treatise on Ensilage and Catalogue sent Free.
SILVER & DEMING MFG. CO., Salem, O.
HENION & HUBBELL, 55 E. Clinton St. Chicago, Western Agts.

READ ADVERTISEMENT OF KEYSTONE WATCH CLUB CO. IN THIS ISSUE.

Orchard and Fruit Garden in September.

If fruit trees or shrubs are to be planted the coming fall or next spring, prepare the soil well beforehand. The need of manuring for a grain or other annual crop is evident to all, but many fail to see that when the crop will not be harvested until from three to ten years, the ground needs manuring. Many of the poor orchards seen all over the country are due to setting out the trees with scarcely more care than if they were posts. Apple trees, for example, pass the first five to ten years after planting in getting ready to bear; they form a head or framework upon which to hang the fruit, and store up nourishment to sustain its growth. The tree should during all its life be well fed, but especially so during this early time. Where a choice of soil may be had, it is safe to select a good sod; apply a heavy coating of stable manure and turn it under as well as the implements at hand will allow. The trees planted in this will not meet with a check, but having about as good soil as they had in the nursery will grow right on, and not only come into bearing sooner but bear better and more profitable fruit than if allowed to struggle through their early years in a poor soil. We frequently are asked from a far distant State, what variety shall be planted. This is a most important matter. If there is a farmers' or fruit growers' club, the united wisdom and experience of its members will be of great value. The first question to be decided with fruit as well as with cabbages is, "How will you dispose of the crop?" If there is no orchard on the place, first provide for the needs of the family. Fruits of all kinds are so healthful, and contribute so greatly to the comfort of the family, that there should be an abundance of all available kinds for home use, and without regard to marketing the produce. Perishable fruits are only profitable when there is a market near at hand, and the berry fruits can only be raised where a sufficient number of pickers can be had the moment they are required. A day of delay may cause the loss of the crop.... Apples require much care in selection. Winter varieties can be sent to a distant market, and can be made more profitable than they usually are by producing fine fruit with care in cultivation, and care in assorting and packing. Early varieties are soon perishable and only suited to a near market; in such localities, showy varieties are profitable. The introduction of evaporating and canning factories has opened markets for much fruit, and in some orchards the crop is largely made into cider, to be sold either as cider or to be converted into vinegar. In this, as in most other cases in which crops are worked up or manufactured on the farm, to be successful requires an amount of intelligent labor and study that few farmers can afford.... Blackberries require care in picking. Some varieties when quite ripe and fit for eating have a bad color, and make a poor show in the market. As soon as the fruit is cleared from these and from raspberries, cut away and burn the canes that have borne.... Grapes in harvesting should be gathered without handling to rub off the bloom. Gather in large shallow trays, and before packing, place them in a cool airy fruit house for several days, in order to "cure," as it is called; that is, the skin becomes toughened and the stems to the cluster shrink somewhat, and the berries will not fall off, as they would if packed at once. The varieties vary greatly as to the time required for this. The best keeping grapes, such as Catawba, Iona, Diana, etc., should be allowed to hang upon the vine until quite ripe; this will be known by the stem to the cluster losing its stiffness and the bunch hanging directly down. The vines may have their annual pruning after the leaves have fallen. It is not always best to delay pruning until spring.

Window Plants in September.

Have the plants in readiness to go into the houses, and the houses in complete readiness to receive them. It is better to take in the plants too soon than too late. A cold autumnal storm and gale will often do more damage than actual frost. Have both plants and pots clean, the plants free of insects, and trimmed into shape. Have the furnaces so that a fire can be made should there be a sudden demand.... If the window is to be furnished and new plants purchased from a florist, procure them early before they have been exposed to heat, so as not to have them exposed to severe changes of temperature. Nothing is more useful for the window garden than the Dutch bulbs. Procure hyacinths, narcissuses and others as soon as the dealers offer them, pot them and place them in a dark cellar where they may form roots. Lay in a stock of soil, sand, pots and such other supplies as may be wanted in winter, and be all ready.

Bee Notes for September.

As the honey season is substantially at an end, it is time for some very necessary work. It is of vital importance that every colony of bees should have a thorough inspection at the end of the honey season. It would be very exceptional if some colonies were not found queenless, and robbing is sure to follow. Parent stocks that have cast swarms are generally the ones found wanting in this respect, and if attention is not given at the close of the honey flow the bees will get the start of us. When the flow ceases the bees with their powerful force of idlers hunt up and rob such defective stocks. It matters little whether such queenless colonies are weak or strong, they will not defend their stores. The mischief does not stop here; but when robbing bees become aroused they will overpower and destroy colonies that may be in proper condition. It is of the utmost importance to see that every colony has a good fertile queen at this season. The reason why colonies having cast swarms are often found queenless is that at the time of maturing they have but the one young queen; they have no brood to fall back upon if the young queen becomes lost, when she issues alone into the open world to receive fertilization surrounded by myriads of enemies. In returning she sometimes enters the wrong colony. September is the proper month to feed all colonies that may lack in food, for winter bees cannot be fed successfully during freezing weather, and if fed early they seal the honey over. Unsealed honey in the combs near the bees during cold weather becomes diluted with the moisture from them and is unhealthful. Caring for, handling and disposing of the honey crop also demand our attention during the latter part of the season. It has been too common to ship honey to distant markets at a low figure. No one can as successfully build up a demand for honey as the apiarist himself, and the business is far safer in his hands than in any other. He cannot protect his honey interests thousands of miles away. The general public looks upon honey with suspicion, and doubtless the time has been when it was largely adulterated by dishonest commission men. When honey was worth from thirty to forty cents per pound there was some temptations to mix it largely, but owing to the rapid improvements in bee-keeping we are now able to produce genuine honey at a price which offers no inducement for adulteration. This great evil has mostly disappeared, but consumers do not understand it and we must set them right. The place to commence operations is at home, where we have the entire care and control of the matter. Several thousands of pounds of honey may be disposed of in almost any locality with much greater profits than by shipping. Build up a home market and never seek business away that can be transacted at home.

Monthly Crop Report.

WASHINGTON, Aug. 10.—The Department of Agriculture reports a small advance in condition of corn from 93.0 last month to 95.5. Rains have been generally seasonable, though in excess in some districts and deficient in some others. In Kansas, the Carolinas, Delaware and New York, condition is reduced by local drouth. In the Southwest, where drouths sometimes occur at this season, there has been an improvement, and a large crop is already assured.

Spring wheat has fallen from its high position of a month ago. The chinch bug stands at the head of the disasters reported, involving, more or less, Wisconsin, Minnesota, Iowa, Nebraska, and in places doing serious damage. High temperature, excessive rains, blights, rusts and the army worm are locally reported, evidently without seriously reducing the general condition. The general condition has been reduced from 95.9 to 87.3 during July. There are no estimates of winter wheat after threshing as yet, but voluntary remarks of reporters make the yield better than the early promise in all the States that produce much of a crop. Cases of heavy yields are reported.

The changes that have occurred in the general averages of other crops during the month are: Oats, from 95.2 to 91.7; barley, from 91 to 89.4; spring rye, from 96.8 to 91.4; Irish potatoes, from 95.7 to 93.2. The buckwheat crop, first reported in August, averages in condition 92.5.

The report shows a small reduction in condition of cotton in the Carolinas, Alabama and Louisiana, and an advance in Florida, Texas, Arkansas and Tennessee. The averages of Georgia and Mississippi are unchanged. The general average is 87.3 against 86.7 a month ago, and 93.3 last August.

There has been an excess of rain until recently in the cotton region. Drought of short duration is locally indicated on the Atlantic coast, and on the Gulf coast east of the Mississippi. West of the Mississippi, in Northern Mississippi and Western Tennessee, rains have been frequent and abundant, and the growth of the plant is from medium to large. East of the State of Mississippi the plant is comparatively small. In nearly the entire breadth the development is represented as later than usual, though picking was about to commence in the lower latitudes.

Cotton is almost without exception reported in sound health and vigor, with as little shedding of leaves and forms as is mentioned in the most successful seasons. There is a little rust, but not serious except in a few counties, mostly in Georgia and Alabama, where the "black rust" prevails in certain localities.

The caterpillar is present very generally in the southern half of the lower tier of States, but is doing no injury except in a county or two in Florida. It is not much dreaded, being kept in limited numbers by poisoning. The boll worm is in some counties of Texas.

A Plant from Kansas.—Wm. Cairns, Osage Co., Kansas, sends us a plant which came up in a neighbor's garden. The plant is two to three feet tall, has numerous wiry branches, three-parted leaves, and small white flowers, shaped much like those of clover, in very slender clusters, and followed by small, mostly one-seeded pods. The plant in drying gives off a pleasant odor like that of the sweet-scented vernal grass. It is a Melilot (*Melilotus*). If the flowers when first opened are white, it is the white melilot, *M. albus*. If pale yellow, it is the common melilot, *M. officinalis*. These and a few others were formerly cultivated in Europe as forage plants, but they are mostly inferior to clover and others, and now exist all over Europe as weeds, especially in vineyards. In some parts of this country the melilots are established, but have never become very troublesome, being annuals, though sometimes lasting more than one year. They are not difficult to subdue.

MISCELLANEOUS ADVERTISING.

WELLS, RICHARDSON & Co's IMPROVED Butter Color.

EXCELS IN { STRENGTH PURITY BRIGHTNESS

Always gives a bright natural color, never turns rancid. Will not color the Buttermilk. Used by thousands of the best **Creameries** and **Dairies.** Do not allow your dealer to convince you that some other kind is just as good. Tell him the **BEST** is what you want, and you must have Wells, Richardson & Co's **Improved Butter Color.**

Three sizes, 25c. 50c. $1.00. For sale everywhere.

WELLS, RICHARDSON & CO. Burlington, Vt.

(33 Colors.) DIAMOND DYES

are the **Purest, Cheapest, Strongest,** and most **Durable** Dyes ever made. One **10c.** package will color **1 to 4 pounds** of Dress Goods, Garments, Yarns, Rags, etc. Unequalled for *Feathers, Ribbons,* and all *Fancy Dyeing.* Also **Diamond Paints,** for Gilding, Bronzing, etc. Any color Dye or Paint, with full instructions and sample card mailed for 10 cents. At all Druggists

WELLS, RICHARDSON & CO., BURLINGTON, VT.

GOLD MEDAL, PARIS, 1878.

BAKER'S Breakfast Cocoa.

Warranted ***absolutely pure Cocoa,*** from which the excess of Oil has been removed. It has *three times the strength* of Cocoa mixed with Starch, Arrowroot or Sugar, and is therefore far more economical, *costing less than one cent a cup.* It is delicious, nourishing, strengthening, easily digested, and admirably adapted for invalids as well as for persons in health.

Sold by Grocers everywhere.

W. BAKER & CO., Dorchester, Mass.

WE SELL ALL AMERICAN

BICYCLES!

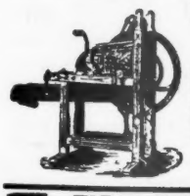
AND GUARANTEE LOWEST PRICE.

A. W. GUMP & CO., Dayton, O.

LARGEST RETAIL STOCK IN AMERICA.

52 in.,	Otto factory price	$60.00,	our price	$40.00.
50 in.,	" "	55.00,	" "	35.00.
48 in.,	" "	50.00,	" "	33.00.
46 in.,	" "	45.00,	" "	30.00.
44 in.,	" "	40.00,	" "	27.00.

Order quick. Also 250 second-hand Wheels. Repairing and Nickeling. Bicycles and Guns taken in trade



SEND for **Illustrated Catalogue of the**

SPANGLER

Broadcast and Single Row Fertilizer Distributors, Lime Spreader, Grain Drill, Corn Planter, Corn Sheller, Feed and Fodder Cutters, etc. None equal.

The Spangler M'f'g Co.,
YORK, PA.

OUR FIRE-PROOF ROOFING

Will give you Unequaled Satisfaction. Send for proof positive of this. Catalogues, Price List and all necessary information. The Best is the Cheapest. Address

THE CINCINNATI CORRUGATING CO.
183 Eggleston Avenue, Cincinnati, Ohio.

CUTTA PERCHA

ROOFING

For Farm Buildings, Factories, etc. Steep or Flat Roofs. **FIREPROOF, WINDPROOF, WATERPROOF.** Send for samples and catalogue.

EMPIRE PAINT AND ROOFING CO.,
1130 Race St., Philadelphia, Pa.

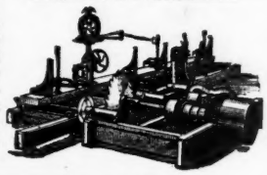
FARM IMPLEMENTS, ETC.

THE WILLIAMS

Grain Threshers, Horse Powers & Engines

For full particulars address
ST. JOHNSVILLE AGR'L WORKS,
St. Johnsville, Montgomery Co., New York.

$160 Farmers' Saw Mill. **Engines, Wood Planers.**



Hege's Improved Circular Saw Mill With Universal Log Beam Rectilinear Simultaneous Set Work and Double Eccentric Friction Feed Manufactured by the

SALEM IRON WORKS, SALEM, N. C.

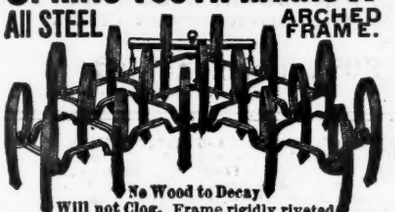
CALF WEANERS AND SUCKING COW MUZZLES. The best in the world. Send for circular. **H. C. RICE,** Farmington, Ct.

ERTEL'S VICTOR HAY PRESS
SHIPPED ANYWHERE TO OPERATE ON TRIAL AGAINST ALL OTHER
PURCHASER TO KEEP ONE DOING MOST AND BEST WORK
GEO. ERTEL & CO. QUINCY, ILL.

THE NEW STEVENS

SPRING TOOTH HARROW

All STEEL **ARCHED FRAME.**



No Wood to Decay

Will not Clog. Frame rigidly riveted together. A superior Clip for holding the Teeth. Only One Nut to loosen in adjusting the Teeth. **Lightest Draft Harrow in the World.** Its entire construction covered by Letters Patent.

A. W. STEVENS & SON, Patentees and Manufrs. Send for Circular. **AUBURN, N. Y.**

Warranted not to blow down off the tower and that our Geared Windmills have double the power of any other mill in existence. Mrs. of Tanks & Windmill supplies of every description and the celebrated

CHALLENGE Feed Grinders, HORSE POWERS. Corn Shellers, **PUMPS & BRASS** Cylinders.

Send for Catalogue & Prices.

Good Agents WANTED!

Always buy the best

Geared or Pumping Mill On 30 Days' Test Trial

CHALLENGE WIND MILL AND FEED MILL CO.,
BATAVIA, KANE CO., ILL.

THE PERKINS' Wind Mill

is the Strongest and Best Self-Regulating Wind Mill made. Full instructions for erecting sent with the first mill. **All Wind Mills warranted.** For Circulars and Prices address

The Perkins' Wind Mill & Ax Co.,
Agents wanted. **Mishawaka, Ind.**

CHAS. F. MUTH & SON,
— DEALERS IN —
PURE HONEY AND BEESWAX.

Manufacturers of **Muth's Honey Extractor, Perfection Cold Blast Smokers, and a General Assortment of Bee Keepers' Supplies.**

"Practical Hints to Bee Keepers" mailed for 10 cents in Postage stamps. Circulars sent on application. Address

CHAS. F. MUTH & SON, Cincinnati, O.

GOOD NEWS TO LADIES.

Greatest Bargains in **Teas, Coffees,** Baking Powder and **PREMIUMS.** For particulars address

THE GREAT AMERICAN TEA CO., 31 & 33 Vesey St., New York, N. Y.

LANDS, HOMES, ETC.

Farms For Sale IN MICHIGAN.

—o—

New Price List just issued for Free Distribution. Over 300 of the finest farms in the State fully described. Also a map of Michigan, showing railroads, towns, cities, etc.

—o—

GEO. W. SNOVER,

Real Estate and Loan Agent,

103 Griswold St., Detroit, Mich.

LAND FOR SALE.

Three thousand acres of splendid prairie land lying in Edgar Co., Illinois, thirty miles west of Terre Haute, Indiana, on the Indianapolis and St. Louis Railroad, is offered for sale, on good terms, in lots to suit purchasers. This land is conveniently located, of the very best quality, well set in blue grass; has been used for grazing stock for many years, has never been cultivated, and is new and rich. One of the best tracks of land in Central Illinois. For terms address or apply to **PRESTON HUSSEY,** Terre Haute, Indiana, or **WM. H. STERRETT,** Dudley, Illinois, near the land.

FOR SALE.

A Fine Fruit, Stock and Grain Farm, 240 Acres, near one of the best cities in **Kansas,** in a fine state of cultivation; the fruit alone will pay eight per cent on the investment. House of six rooms, cellar and out-kitchen, nice grove of walnut, ash, cottonwood and evergreens about the house, and Catalpa grove near. Two never-failing springs in pasture, 70 acres in wheat this year. Price $40 per acre on terms to suit. Also a Grain and Stock Farm, 160 acres, in good state of cultivation, not a rod of waste land on it; house of three rooms and cellar, two wells, orchard, stable, granary. Must be seen to be appreciated. Price $5,000 on easy terms. Address

J. S. BOYNTON, Winfield, Kan.

EXECUTORS' SALE.

DESIRABLE FARM, about 500 acres, located near Moorton Station, Kent Co., Delaware. These are very desirable farm lands in a high state of cultivation, with suitable buildings. Six miles from Dover and on the Delaware railroad. Plenty of wood and running water. Very suitable for raising cattle. Apply to **ROBERT N. SIMPERS,** 131 S. 5th St., Philadelphia, Penn.

NORTH CAROLINA FARM FOR SALE!

1063 acres. Lake and river front—103 acres lake. Unexcelled for dairy or general agriculture. Terms, description and lithographic map on application to

JAMES H. WHITAKER,
Enfield, Halifax Co., N. C.

FOR SALE —at reasonable price—**GREEN HILL STOCK FARM,** 3 1-2 miles from Burlington, N. J., comprising **360 acres** excellent land, with country seat and ample farm buildings. Thoroughly equipped and stocked with registered Jersey cattle. For particulars, address

CHAS. S. TAYLOR, Burlington, N. J.

Don't Go West!

Try the **CUMBERLAND COLONY** New Jersey, a new and prosperous settlement. **20,000 ACRES.—NEAR BEST MARKETS.** For sale in **Small Farms** on **Easy Terms.** For information address **Richland Improvement Co.,** Richland, N. J.

FARMS FOR SALE IN SUSSEX CO., DEL. The peach belt of the Del. and Md. Penin. sula. Address L. T. SAULSBURY & CO., Georgetown, De.

FARMERS—Before buying land write for our free catalogue, "Farms for Sale and Exchange."

HENRY L. STAPLES & CO., Richmond, Va.

ARE YOU GOING TO FLORIDA? Do you wish winter home? An Orange, Lemon, Peach Grove, or to plant Cuban Tobacco? High, healthy lands, thriving locality, near R. R. P. O., Tourist hotels, 36 hours from N. Y., in Lake Region, Orange Co. Might exchange. **BOX 18,** Winter Park, Fla.

CALIFORNIA For *free information* concerning **AGRICULTURAL LAND** in **Southern California,** address with stamp,

JOHN B. ISLER, San Diego, Cal.

SEND for our Catalogues of RURAL BOOKS. It will be forwarded free.

ORANGE JUDD CO., 751 Broadway, New York.

PORTABLE -:- MILL -:- MANUFACTORY.

ESTABLISHED, 1851.

28 Sizes and Styles of Portable FRENCH BURR MILLS.

Complete Mill and Sheller $100. A boy can keep it in order and in operation. Adapted to any kind of power.

RECEIVED HIGHEST AWARDS
At the St. Louis, Cincinnati, Indianapolis, and New Orleans Fairs and Expositions.

SEND FOR MILL BOOK AND HOW TO GRIND.

COMPLETE MILLS ON ROLLER PROCESS, CORN MEAL, HOMINY, GRITS, PEARL MEAL, STARCH.

New and Second Hand Bradford and Straub Mills in Stock.

Nordyke & Marmon Co., Indianapolis, Ind.

SEDGWICK WOVEN STEEL WIRE FENCE AND GATES.

The best Farm, Garden, Poultry Yard, Lawn, School Lot, Park and Cemetery Fences and Gates. Perfect Automatic Gate. Cheapest and Neatest Iron Fences. Iron and Wire Summer Houses. Lawn Furniture, and other wire work. Best Wire Stretcher and Pliers. Ask dealers in hardware, or address

SEDGWICK BROS., Richmond, Ind.

EDWARD SUTTON, Eastern Agent, 300 MARKET ST., PHILADELPHIA, PA.

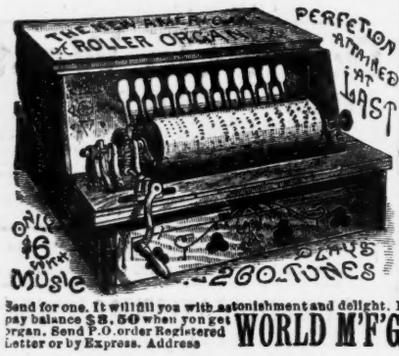
SMALLEY GOODS—including ENSILAGE AND FODDER CUTTERS, SWEEP AND TREAD HORSE POWERS, DRAG & CIRCULAR SAW MACHINES, FARM ENGINES & PLOWS,

are positively ahead of all others in the country, and so warranted. Shipped to any responsible farmer in the U. S. or Canada, subject to 30 days' trial, and to return at our expense if not proving just as warranted. The SMALLEY BUCKET CARRIER (1888 Patent) is the only one that can be run at any angle from 40 to 85 degrees, and is the only perfect Silo Carrier in the market. Our "Why it Pays," or "*Practical Views from Practical Men*," should be read by every farmer interested in Stock raising or Dairying. *Mailed free* to any address, *mentioning this paper*. Also contains full descriptive price list of SMALLEY GOODS.

SMALLEY MFG. CO.,
MANITOWOC, WIS.

Ask for *Special introduction prices and terms.*

The SMALLEY CUTTER, with Improved Bucket Carrier. SMALLEY TREAD POWER WITH GOVERNOR.



The New American **ROLLER ORGAN** is operated similar to the finest French Music Boxes and PLAYS 260 TUNES, from a waltz to a hymn, with perfect tune and time. Gives better satisfaction than A HUNDRED DOLLAR PARLOR ORGAN and ten times more pleasure. This Organ is the perfection of musical instruments and the grandest and most marvellous instrument ever presented to the public. It plays SACRED MUSIC, MARCHES WALTZES, POLKAS, JIGS Reels, Opera Selections, Popular Songs, Church music, as well as any organ. Nothing grander, or combining so many features can be found in French or Swiss Music Boxes, costing $100. WE WANT A SPECIAL AGENT, EITHER SEX, IN EVERY LOCALITY, AND OFFER SUCH INDUCEMENTS THAT EARNEST WORKERS CANNOT FAIL TO MAKE $100 TO $300 PER MONTH. When you order a sample instrument get Special Terms. Price Only Six Dollars in BEAUTIFULLY CARVED CASES with music. Send for one. It will fill you with astonishment and delight. If you want it sent C.O.D. send $2.50 when you order and pay balance $3.50 when you get organ. Send P.O. order Registered Letter or by Express. Address WORLD M'F'G CO. 122 Nassau Street, New York

10,000 AGENTS WANTED to supply FIFTY MILLION PEOPLE with THE LIFE OF **BEN HARRISON** By the author of **BEN HUR.**

Gen. Lew Wallace, the *eminent* Author, Statesman, Diplomat, and *life-long friend* of Gen. Harrison, is writing the *only authorized* Biography. "*No man living more competent.*"—Ex-Gov. Porter, of Ind. Millions have read Ben Hur and want Ben Harrison by same author. Selling *immensely*. *By mail* $2.00. Greatest Money Making book yet. Outfits 50 cts. HUBBARD BROS., Philadelphia or Chicago.

AN EMINENT SUCCESS!

Big Injun Sulky Plow!

A Practical 3-Wheel Sulky Plow.

Draws out of the ground without disturbing the furrow. Full line of CHILLED STEEL AND COMBINATION WALKING PLOWS. Send for circulars.

GALE MANUFACTURING CO.,
ALBION, MICH.

Barnes' Patent Foot Power Machinery.

Workers of Wood or Metal,

without steam power, by using outfits of these Machines, can bid lower, and save more money from their jobs, than by any other means for doing their work. Also for INDUSTRIAL SCHOOLS or Home TRAINING. With them boys can acquire practical journeyman's trade before they "go for themselves." Send for Catalogue. W. F. & JOHN BARNES Co., No. 65 Ruby St., Rockford, Ill.

WHITMAN'S PATENT AMERICUS

The Best Cider and Wine Mill made. Will make 20 per cent. more cider than any other. Geared outside. Perfectly Adjustable. Prices as low as any first-class mill. Mfrs. of Hay Presses, Horse Powers, Corn Shellers, Feed Cutters, Feed Mills, etc. Send for circulars.

3 SIZES

WHITMAN AGR'L CO. St. Louis, Mo.

Heebners' Patent Level-Tread Horse-Powers

With Patent Speed Regulator.

Heebners' Improved Threshing Machine, Fodder Cutters, Corn Shellers, Wood-Saws, Field Rollers. Extraordinary success with latest improvements. Catalogues Free. HEEBNER & SONS, Lansdale, Pa.

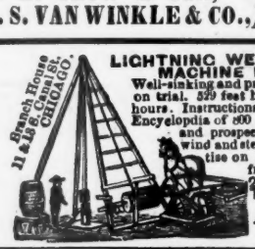
RUSTLESS IRON WATER PIPE

SEND FOR CATALOGUE

THE WELLS RUSTLESS IRON CO.
121 CLIFF STREET NEW YORK

EDWARD L. COOK, Buffalo, Agent for Buffalo, New York.
BRAMAN, DOW & CO., Boston, Sole Agents for New England.
I. B. CLOW & SON, Chicago, Sole Agents for North West.
I. S. VAN WINKLE & CO., San Francisco, Sole Ag'ts for Pacific Coast.

LIGHTNING WELL-SINKING MACHINE MAKERS.



Well-sinking and prospecting tools sent on trial. 579 feet has been sunk in 9 hours. Instructions for beginners. An Encyclopedia of 600 Engravings of well and prospectors' tools, pumps, wind and steam engines. A treatise on gas and oil. Book free, mailing charges 25 cts. each.

The American Well Works,
AURORA, ILLS., U. S. A.

DEDERICK'S HAY PRESSES.

are sent anywhere on trial to operate against all other presses. the customer keeping the one that suits best.

P. K. DEDERICK & CO., Albany, N. Y.

MISCELLANEOUS ADVERTISING.

EMPIRE WELL AUGER CO., ITHACA, N.Y.

Davis STUMP Puller Lifts 20 to 50 Tons. Worked by 2 men. 5 sizes. **Price, $35 to $70.** Circulars Free. Sent on **Three Days Trial.** H. L. Bennett, Westerville, O.

1888 NEW KEMP MANURE SPREADER

IMPROVED AND FULLY WARRANTED

BUY ONE. Manure DOUBLE the ACRES.

CIRCULARS FREE.

Save 90 per cent of labor in spreading which facts are well established by the thousands using them. Address

KEMP & BURPEE MFG. CO.
SYRACUSE, N.Y.

ENSILAGE

TORNADO FEED and ENSILAGE CUTTER.

[*New Cutting Device*].

Cuts ensilage on a new and improved principle. See new cutting device. It **Splits** as well as **Cuts Stalks**, and puts all into the **best possible condition to pack solidly in the Silo.** Send for our Illustrated Catalogue. Address

W. R. HARRISON & CO., Canton, Ohio.

BEFORE BUYING A Buggy, Carriage, Wagon, Driving Cart, or Harness write for the **EXTRAORDINARY OFFER** we make to introduce our goods, **Fully Guaranteed.**

14 different Road Carts The largest assortment in the country. Don't miss this chance. We make special inducements now to have our goods exhibited at every County Fair. Will you do it if we pay you?

Our Oak Tanned Full Nickel **HARNESS $11.25.**

UNION MACHINE CO., PHILADELPHIA, PA.

To introduce our **SLEIGHS** everywhere, we will sell one **AT A GREAT BARGAIN!** to the first person from any P.O. answering this advertisement.

UNION MACHINE CO., 426 Walnut St., Philadelphia, Pa

LANTERN SLIDES *Microscopes, Telescopes, Spectacles, Barometers, Field Glasses, Photographic Outfits for Amateurs, &c.* **W. H. WALMSLEY & CO.,** Philadelphia, Pa. Illus. price list free. Send for *Special Bargain Lists.*

NEW AND REVISED EDITION.

Wheat Culture.

How to Double the Yield and Increase the Profits.

By D. S. CURTIS, Washington, D. C.

ILLUSTRATED.

CONTENTS.—Wheat Culture; The Wheat Plant; How to Obtain a Large Yield; Incidental Requisites to a Large Yield; Planting or Sowing Wheat; Importance of the Wheat Crop; Flour the Form, in which to Sell Wheat; Varieties Most Grown in the United States; Recapitulation of Operations; Winter Killing of Wheat; Analysis of Wheat and Straw, etc., etc.

PRICE, POSTPAID, 50 CENTS.

ORANGE JUDD COMPANY,
751 BROADWAY, NEW YORK.

PROFITABLE TO GROW is the **PYLE'S RED WINTER APPLE** a large, red, showy apple; good keeper, and abundant bearer. Price, first-class trees, **75 cents,** second class **50 cents,** each. Write to **GEORGE ACHELIS, West Chester, Pa.**

TREES Fruit & Ornamental. **FALL PLANTING.** We offer the largest and most complete general stock in the U. S., besides many **Novelties.** Catalogues sent to all regular customers, **free.** To others: No. 1, Fruits, 10c.; No. 2, Ornamental Trees, etc., illustrated, 15c.; No. 3, Strawberries; No. 4, Wholesale; No. 5, Roses. **Free.**

ROSES
GRAPE VINES **ELLWANGER & BARRY**

MT. HOPE NURSERIES, ROCHESTER, New York.

1838 POMONA NURSERIES 1888

Parry, Lida and Bomba Strawberries, Marlboro and Golden Queen Raspberries, Wilson Jr., Erie and Minnewaski Blackberries, Niagara, Empire State and Moore's Early Grapes, Lawson, Kieffer and LeConte Pears, Wonderful and Globe Peach, Spaulding and Japan Plums, Delaware Winter and Red Cider Apples. All the worthy old and promising new varieties. Catalogue free.

WM. PARRY, Parry, N. J.

BUY THE BEST. The New Felton Strawberry; growth, size and quality. Globe Peaches. Catalogue free. S. C. DECOU, Moorestown, N. J.

1,000,000 PLANTS. **Strawberry, Raspberry, Grape, Currant, Gooseberry, etc.** We have agreed with publishers of this paper to send every subscriber sending us their address, Price List, with lithograph of **Thompson's Early Prolific Red Raspberry** and **Haverland Seedling Strawberry.** Beats them all! Don't miss it! Send at once. **CLEVELAND NURSERY,** Lakewood, O.

PEACH TREES.—Superior quality, one year old. All leading varieties. Yellows are not known here. Catalogues free.

D. S. MYER & SON, Bridgeville, Del.

FRUIT TREES at Low Prices. Green's Book on Grapes or Apples free.

GREEN'S NURSERY CO., Rochester, N. Y.

NEW AND RARE PLANTS, ORCHIDS, Etc.

A Large Collection of Hot-House and Greenhouse Plants Carefully Grown at Low Rates.

Orchids—a very extensive stock—East Indian, Mexican, Central, South American, etc.

Roses, Clematis and Dutch bulbs. Large importations from leading growers in Holland.

Fruit and ornamental trees, etc. Catalogues on application.

JOHN SAUL, Washington, D. C.

SCHOOL ADVERTISEMENTS.

TENOGRAPHY and **Typewriting, Telegraphy, Book-keeping, Banking, Penmanship, Correspondence, Arithmetic, &c.** Young men and women taught to earn a living and given a thorough preparation for **honorable positions.** Terms reasonable. Time short. Instruction thorough. Business men supplied with competent assistants on short notice. No charge for situations furnished. Address for catalogue, **Eastman College,** Poughkeepsie, N. Y.

University of the State of New York.

American Veterinary College.

139 and 141 West 54th St., NEW YORK CITY.

The only school in the STATE which has the right to grant the degree of Doctor of Veterinary Surgery (D.V.S.)

The regular course of Lectures commences in Oct. each year. Circular and information can be had on application to **Dr. A. LIAUTARD, V. S., Dean of the Faculty.**

MT. CARROLL SEMINARY (Carroll Co. Ill.). **Incorporated with its Musical Conservatory,** in 1852. Never had an agent. Never begs funds or patronage. Its **PECUNIARY AID SYSTEM** is *original* and helps many worthy girls in preparation for usefulness. Tuition and use of books *free* to students meeting certain requirements, as explained in the "*Oread.*"

Send for a copy and learn particulars.

COLLEGE **N. E. OHIO NORMAL, Canfield, O. All expenses, $100 per year. Rev. E. B. WEBSTER, Pres.**

YOUNG MEN WANTED to Learn Telegraphy. Situation furnished soon as qualified. Cost of learning low. Particulars free. Address **VALENTINE BROS.,** Janesville, Wis.

SHORT HAND PAMPHLET AND 6 MAIL lessons, half-course, **TEN CENTS.** Lingle's College, 1431 Chestnut St., Phila.

HELLMUTH LADIES' COLLEGE, London, Canada. Students from all parts of America. Number received limited. **Literature, Languages, Mathematics, Science, Music, Painting, Elocution, Business Course, etc.** Climate exceptionally healthy. Terms moderate. For circular address Rev. E. N. ENGLISH, M. A., Principal.

HOME STUDY. Book-keeping, Business Forms, Penmanship, Arithmetic, Shorthand, etc., thoroughly taught by MAIL. Circulars free.

BRYANT & STRATTON'S COLLEGE, 445 Main St., Buffalo, N. Y.

SHORTHAND Writing *thoroughly taught* **by mail** or personally. **Situations procured** all pupils when competent. end for circular. **W. G. CHAFFEE,** Oswego, N.Y.

RICHMOND BUSINESS COLLEGE.
INSTITUTE OF PENMANSHIP AND SHORTHAND

Established 1860. Superior advantages. Expenses moderate. Board, $2.00 to $3.00. Success guaranteed. Send for catalogue. **Richmond, Ind.**

WESTERN RESERVE ACADEMY.

HUDSON, OHIO. The only Academy in the West whose graduates can enter any college in the country. For catalogue, address **NEWTON B. HOBART,** Principal.

BROOKE HALL FEMALE SEMINARY,

MEDIA, DEL. CO., PENN.

This school, standing firmly on its well-earned reputation, under the same Principal for thirty-three years, commences its Fall Session September 19th.

M. L. EASTMAN, Principal.

Best PLACE in America to get a Business Education, learn Spencerian Penmanship or Shorthand is at the **Spencerian Business College,** Cleveland, Ohio. Shorthand taught by mail. Elegant catalogue free.

SHORT-HAND SELF TAUGHT Send for Catalog of Books and helps for self-instruction by **BENN PITMAN and JEROME B. HOWARD,** to THE PHONOGRAPHIC INSTITUTE, CINCINNATI, OHIO.

HARPER'S PERIODICALS.

PER YEAR:
Postage Free to Subscribers in the United States or Canada.

HARPER'S MAGAZINE	$4 00
HARPER'S WEEKLY	4 00
HARPER'S BAZAR	4 00
HARPER'S YOUNG PEOPLE	2 00

Published by HARPER & BROTHERS, New York.

BOOKS. **FARMING WITH GREEN MANURES.** The Fourth Edition now ready. Price, bound in paper, 65 cents—in cloth $1. Will be sent, for cash, free of postage. Address

DR. HARLAN, Wilmington, Del.

LIVE STOCK, ETC.

☞ **FRIENDS!** If you are in any way interested in

BEES OR HONEY,

We will with pleasure send you a sample copy of our **SEMI-MONTHLY GLEANINGS IN BEE CULTURE,** with a descriptive price-list of the latest improvements in **Hives, Honey Extractors, Comb Foundation, Section Honey Boxes,** all books and journals, and everything pertaining to Bee Culture. *Nothing Patented.* Simply send your address on a postal card, *written plainly,* to **A. I. ROOT, Medina, Ohio.**

EGGS PRESERVED BY A NEW PROCESS.

SEND $1 with your address to **W. H. DOLE, Melrose, Mass.,** and I will send you receipts for preserving eggs. Will guarantee them to keep one year. Every one who raise egg should preserve them in this way, whenever they are less than twenty-five cents per dozen.

CALCITE for Poultry and Pigeons. Send for sample and Price List. **YORK CHEMICAL WORKS, York, Pa.**

BROODERS. BEST AND CHEAPEST in the world. Three styles of Incubators. Circulars. A. WILLIAMS, Bristol, Conn.

PIGS, *Jersey* **Calves;** *Rough-Coated* **Collies,** *English* **Beagles;** *Standard* **Fowls, Turkeys, Ducks, Eggs. PRIZE STOCK** *cheap.*

F. MORRIS, Norway, Pa.

$10 A Pair for Bronze and Narragansett Turkeys. 20 per cent discount for orders before Nov. 1st. T. Bunker on Turkey Raising, 25 cents. Address, **W. CLIFT Mystic Bridge, Ct.**

Cotswolds, South-Downs, Oxford-Downs,
SHROPSHIRE AND MERINO SHEEP AND LAMBS.

We are now booking orders for July and August delivery We have always on hand yearling and two-year-old Rams Ewes and Lambs. Satisfaction guaranteed in every particular, and safe delivery at destination.

W. ATLEE BURPEE & CO.,
475 and 477 N. 5th St., Philadelphia, Pa.

Chester White, Berkshire and Poland China **PIGS, Fine Setter Dogs, Scotch Collies, Fox Hounds and Beagles. Sheep and Poultry,** bred and for sale by W. GIBBONS & CO., West Chester, Chester Co., Pa.

Send stamp for Circular and Price List.

Just What You Want.

We announce elsewhere a new and valuable premium book entitled "A DICTIONARY OF POLITICS." This book is not gotten out in the interest of any political party but is non-partisan in every respect. It gives in convenient form the political history of the federal government up to the present time, the formation of the constitution, the rise and fall of parties, famous measures, national movements and foreign relations. It describes the practical workings of the government. Numerous other features are given that will interest every one. It is a book of reference which every American family should have.

The book is highly commended by leading men of all parties, and we know that our readers cannot fail to be suited with it.

Every subscriber is offered an opportunity of getting a copy of this book free by procuring two new subscribers to the AMERICAN AGRICULTURIST. Full particulars will be found in the announcement in our advertising columns. We expect to hear from thousands of our subscribers under this offer. Any of our present subscribers can easily procure two new subscribers by simply calling the attention of their friends to the merits of the AMERICAN AGRICULTURIST and showing them our liberal offer.

Cotton and Its Products.—A recent bulletin by Prof. Wm. C. Stubbs, Director of the Louisiana State Experiment Station, presents in a forcible and interesting style, many facts regarding the cotton crop. The best soil, he says, is well-drained clay loam, or sandy loam on clay subsoil. Deep and thorough preparation should always precede planting; a good planter should be used to make straight rows; the first plowing after the crop is up may be deep, but all subsequent cultivation must be shallow, so as not to break the roots, and must be frequent to keep the crop clean. Good seed must be used and planting should be done as soon as the ground is warm. Various manures were tried, and the best success followed the use of the compost made according to the following formula: One hundred bushels cotton seed, one hundred bushels stable manure, one ton acid phosphate, high grade. For sandy soils, half a ton of kainit is dissolved in water, which is used to wet the compost. The above ingredients are spread in thin alternate layers, dampened and covered with five inches of earth, and allowed to lie four to six weeks, then well mixed and applied at the rate of five hundred to one thousand pounds per acre. The cotton boll worm is the great pest of the cotton planter, and is best fought with arsenical poisons. Paris green suspended in water, or mixed dry with flour, plaster, ashes or dry clay, is a sure thing if used faithfully.

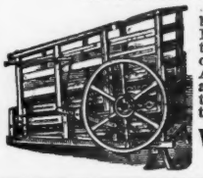
Chicken Lice—English Sparrows.—Samuel P. Dagg, Halifax Co., Virginia, writes that he finds hot water to be the most effective weapon against vermin in the poultry-house. He takes a teakettle of boiling water and a tin dipper into the house, and dashes it freely upon the roosts, walls and everywhere that vermin can lurk. [The addition of alum dissolved in the water adds to its efficiency.—ED.] Mr. Dagg also suggests that in trying to abate the English sparrow nuisance it is unnecessary to thin out both sexes. It is sufficient to kill off either the cock or hen sparrows. They may easily be distinguished by their color.

MISCELLANEOUS ADVERTISING.

This Threshing-machine received the **highest** award of any at the Centennial Exhibition; the two last **Gold Medals** given by the New York State Agricultural Society; and has been selected from all others, and illustrated and described in that **great** work "Appleton's Cyclopedia of Applied Mechanics." Catalogue sent free. Address, MINARD HARDEN, Cobleskill, Schoharie Co., N. Y.

BROWN BROTHERS & CO.,
NEW YORK, PHILADELPHIA, BOSTON.
Members of New York and Philadelphia Stock Exchanges. Execute orders for all Investment Securities; Buy and Sell Bills of Exchange; Issue Commercial and Travellers' Credits available in any part of the world; Make Telegraphic Transfers of Money between this Country and Europe.
Liverpool, BROWN, SHIPLEY & CO., London.
United States Government Financial Agents in England.

Whitman's New Horse Power.
Steel Rods, Chain and Shafts.



The most perfect and durable Horse Power now made. Nearly 50 years' experience in the manufacture of these machines. Send for circulars. Also **Hay Presses**, both horse and steam power, guaranteed to have no equal. Manufactured by
WHITMAN AG'L CO.,
ST. LOUIS, MO.

50,000 IN USE — WOOD'S FAMOUS CORN SHELLER

Will shell a Bushel of Corn in 4 MINUTES.
Agents Wanted.
Ask Your Merchant FOR IT.
Send for Circular and Price List No. 2.
SAMPLE SHELLER $3.50.
WARRANTED 5 YEARS.
Best Sheller in the World.
CARRY IRON & ROOFING CO.,
Sole Manufacturers and Owners, CLEVELAND, OHIO.

THREE MONTHS FREE!

To New Subscribers
—TO THE—
American Agriculturist.

To everyone not now a subscriber, sending **$1.50,** the regular subscription price, previous to October 31st, we will send the **October, November and December** numbers of this year **free,** dating the subscription to January, 1890, thus giving **fifteen months'** numbers for a **year's subscription.**

Bear in mind this special offer is **good only until October 31st,** and is made to **new subscribers only.**

Our present subscribers who wish to aid us in extending the influence and circulation of this, the Standard Agricultural Journal of the World, should **call the attention of their friends** to our offer, and if possible **induce them to subscribe.**

☞See our new book offer elsewhere in this number.

OUR ANNUAL CATALOGUE
—OF—
IMPORTED BULBS

for fall planting both in and out-doors is now ready and will be mailed free to all who apply.

It is this season much enlarged and published in a beautifully illustrated cover and contains full description, with illustrations and cultural directions of **HYACINTHS, TULIPS, NARCISSUS, CROCUS, LILIES** and all other choice new and standard varieties of Bulbs imported from all parts of the world, also descriptive and illustrated list of **ROSES** and other choice **HOUSE-PLANTS** for winter blooming.

PETER HENDERSON & CO.
35 Cortlandt Street, New York.

BEAUTIFUL WINTER FLOWERS.

For only 10 cts. we will send free by mail 3 *Elegant New Bulbs* for winter blooming, or 7, all different, for 20 cts. Every one is a gem of rare beauty and sure to bloom well in small pots during winter. When ordering ask for our Fall Catalogue of *Bulbs* (Free) with directions for culture, &c., if you do not already possess it.

OUR FALL CATALOGUE
Of **Hardy Bulbs and Plants** for winter and early spring blooming, is now ready, and is the most elegant and complete catalogue of the sort ever issued in the world. In it is offered, with directions for culture, the best Hyacinths, Tulips, Crocus, Narcissus, Lilies, Calochortus, Ornithogalum, Iris, Fritellia, Freesias, Alliums, and a score of other new and rare winter and spring blooming Bulbs, besides many new and rare Fruits, including the Ever-bearing Tree Blackberry and Raspberry. This catalogue will be sent free to any who send us an order, or who will send one after receiving it. Among the special offers it contains are 12 Crocus for 15c., 12 Double or Single Tulips for 40c., 12 Hyacinths for 75c., the Great Chinese Sacred Lily, 50c., 30 beautiful winter blooming Bulbs, $1.00, &c. Any one can have gay flowers in the house during winter, or in the garden as soon as snow melts, at small cost. Our Catalogue tells all about them. Address
JOHN LEWIS CHILDS, Floral Park, N. Y.

Invaluable for Every Housekeeper.
The Family Caterer.

A permanent Bill-of-Fare Calendar, on reversible tablets on fine card-board, to be suspended with the week's *menu* in view. Three meals a day for one year.

BREAKFASTS, DINNERS and SUPPERS, or BREAKFASTS, LUNCHES and DINNERS. Suited to the markets in the different seasons. Accompanied by "THE GOOD COOK," which gives exact directions for cooking all the dishes suggested. Over 1,000 meals, no two alike. Over 250 dishes and recipes for the same.

PRICE, POSTPAID, $1.00.
ORANGE JUDD COMPANY,
751 BROADWAY, NEW YORK.

POULTRY AND BEES. LANGSHANS, P. ROCKS, WYANdottes, B. Leghorns, S. S. Hamburgs, Pekin Ducks and **Italian Bees.** Prices free on application. (Eggs in season.)
A. H. DUFF, Creighton, Ohio.

HARNESS. Hand-made. Best Oak Leather, $8.50, $10, $12 $13.50 $15. Double Sets, $20, $25, $30. Shipped subject o approval. 60-page Catalogue FREE. **Order one. KING & CO.,** *Wholesale Mfrs.*, Owego, N.Y.

5 FOR $2.

Free Trade with you Is our Motto.

No middle man between us. That is why we offer you a 75c knife for 50c, postpaid, 5 for $2. Blades, hand forged, razor steel. **Boys'** 2-blade, 25c; **Stock** knife, 3 blade, $1; **Gents'** fine 3-blade, $1; **Lady's** elegant pearl, 50c; **Pruner,** 75c; **Budding,** 55c; **Grafting,** 25c; Solid Steel Scissors, Razors, Axes, &c. 64 p. list, **free,** also, "How to Use a Razor."

Maher & Grosh,
4 S. Street,
Toledo, - Ohio.

Crayon Portraits.

E. C. Howe, Berrien Co., Mich., sends us a circular he received from a "Portrait Company" proposing to give him a "full life-size crayon or India ink portrait free of charge." The circular is printed in imitation of type-writing. The country is flooded with similar circulars, mostly from Chicago, New York, and other large cities. Some of them offer a portrait free and then sell a frame for eight to twelve dollars, which costs them from seventy-five cents to a dollar; and others collect installments. Whatever form the scheme assumes, the customer is invariably cheated, as the "crayons" are only cheap fadable sun-prints with a few touches of crayon or India ink, and the frames are of the cheapest and most perishable molding and metal. Some idea may be found of the quality of the "art" from the fact that a young man employed in a "crayon studio" in this city is expected to turn out twenty finished portraits a day. One of the worst features of this business is that it often succeeds by appeals to the tenderest and holiest emotions of the human heart. Small likenesses of the dead are copied, enlarged, and framed, the temporary appearance being so good that the surviving friends do not hesitate to pay the price demanded, only to find in a few months that they have a faded print inclosed in a shabby frame.

"Chautauqua Ensilage."

John Mitchell, of Sanilac Co., Mich., sends us a circular bearing the above heading. It sets forth the merits of ensilage in general, and "Chautauqua ensilage" in particular. On one page is a blank "Order for Chautauqua Ensilage Directions," which when filled up and signed binds the person to pay ten dollars on condition "that the directions furnished shall enable me to make corn ensilage which is relished by the cows, and that the expense of the same need not exceed or add to the ordinary expense of filling a silo." The circular states that "these rules have been put in successful practice on a farm in Chautauqua Co., N. Y." This is quite true. An intelligent farmer in Chautauqua County learned how to build and fill a silo as it is done in Illinois, Wisconsin, and other Western States, and put his knowledge into successful practice. And now another man in Montgomery County, who learned how from him, issues this circular, proposing to sell for ten dollars the directions for making ensilage, which are well known to all progressive farmers, and are furnished free by many manufacturers of ensilage cutters. The "Chautauqua ensilage" seems to be about like all other ensilage which is managed according to the latest methods. There is no patent on it or secret about it for which any one need to pay.

Danger Signals.

We have no faith in the "perpetual electric light;" give it a careful trial before investing.

Delivering bogus telegrams to farmers, first exacting the "charges" thereon, is a new form of small swindling.

The Bible competitive swindle is again advertised by publishers who have the reputation of not fulfilling their promises.

Delos Staples, the Michigan blueberry fraud, is now out with a catch-penny game with wheat—"sample sent on receipt of stamps." He is an old offender in a small way.

Mariner G. Miller, a Philadelphia humbug, who advertised to teach picture-coloring in one hour, has been jailed for defrauding one of his patrons. His scheme was one of the "profitable work at home" humbugs that have been so frequently shown up in the AMERICAN AGRICULTURIST. The Crescent Art Co. of Boston is another of this class about which we continue to receive inquiries.

The "damaged bank note" scheme has been worked in Cumberland and Bucks Counties, Pa., where farmers have been swindled out of $200 to $400 each by it. Strangers call, make a good impression, and inform the farmer that there was in the sub-treasury at Philadelphia $1,200 in damaged bank notes which he could buy for $500, and that would pass as good. He is to do up the money in brown paper packages, for which the knaves substitute bogus packages on the sly, and then "skip."

Meetings of Breeders and Dairymen.

The annual recurrence of the American Fat-stock Show in Chicago has made it the rallying point for the great live-stock interest of the country. Nearly all the various organizations devoted to that interest meet in Chicago during the continuance of the show. We have received from Col. Chas. F. Mills, secretary of the Illinois State Board of Agriculture, the following list of meetings to be held during the coming Fat-stock Show:

Tuesday, Nov. 13.—The American Clydesdale Association, at the Grand Pacific Hotel, at 7:30 o'clock P. M. Charles F. Mills, secretary, Springfield, Ill.

Wednesday, Nov. 14.—The American Cleveland Bay Society, at the Leland Hotel, at 7 o'clock P. M. R. P. Stericker, secretary, Springfield, Ill.

Wednesday, Nov. 14.—The American Lincoln Breeders' Association, at the Sherman House, at 8 o'clock P. M. L. C. Graham, secretary, Cameron, Ill.

Wednesday, Nov. 14.—The American Leicester Breeders' Association, at the Sherman House, at 8 o'clock P. M. A. J. Temple, secretary, Cameron, Ill.

Wednesday, Nov. 14.—The Western Circuit State Fairs, at the Sherman House, at 8 o'clock P. M. R. W. Furnas, president, Brownville, Neb.

Wednesday, Nov. 14.—National Swine-Breeders' Association, at the Sherman House, at 2 o'clock P. M. P. M. Springer, secretary, Springfield, Ill.

Thursday, Nov. 15.—The American Shire-Horse Association, at the Sherman House, at 7 o'clock P. M. Charles Burgess, secretary, Wenona, Ill.

Thursday, Nov. 15.—The Red Polled Cattle Club of America, at the Grand Pacific Hotel, at 8 o'clock P. M. L. F. Ross, president, Iowa City, Ia.

Thursday, Nov. 15.—The American Duroc-Jersey Swine-Breeders' Association, at the Grand Pacific Hotel, at 7 o'clock P. M. Charles H. Holmes, secretary, Beatrice, Neb.

Friday, Nov. 16.—The American Shetland Pony Association, at the Sherman House, at 8 o'clock P. M. R. Lee Wilson, secretary, Olney, Ill.

Friday, Nov. 16.—The American Hereford Cattle-Breeders' Association, at the Leland Hotel, at 7:30 o'clock P. M. C. R. Thomas, secretary, Independence, Mo.

Friday, Nov. 16.—The American Aberdeen-Angus Breeders' Association, at the Leland Hotel, at 7.30 o'clock P. M. Thomas McFarlane, secretary, Iowa City, Ia.

Friday, Nov. 16.—The Victoria Swine-Breeders' Association, at the Sherman House, at 7:30 o'clock P. M. Henry Davis, secretary, Dyer, Ind.

Saturday, Nov. 17.—The National Stockmen's Association, at the Exposition Building, at 10 o'clock A. M. A. S. Alexander, secretary, Chicago, Ill.

Tuesday, Nov. 20.—The French Draft-Horse Association, at the Sherman House, at 2 o'clock P. M. Charles E. Stubbs, secretary, Fairfield, Ia.

Tuesday, Nov. 20.—The American Percheron Horse-Breeders' Association, at the Sherman House, at 2 o'clock P. M. S. D. Thompson, secretary, Wayne, Ill.

Tuesday, Nov. 20.—The Illinois Shorthorn Breeders' Association, at the Grand Pacific Hotel, at 8 o'clock P. M. A. B. Hostetter, secretary, Mount Carroll, Ill.

Tuesday, Nov. 20.—The American Sussex Association, at the Sherman House, at 8 o'clock P. M. Overton Lea, secretary, Nashville, Tenn.

Tuesday, Nov. 20.—The American Shropshire Registry Association, at 10 o'clock A. M. M. Levering, secretary, Lafayette, Ind.

Tuesday, Nov. 20.—The American Cotswold Association, at the Sherman House, at 7:30 o'clock P. M. George Harding, secretary, Waukesha, Wis.

Wednesday, Nov. 21.—The American Shorthorn Breeders' Association, at the Grand Pacific Hotel, at 8 o'clock P. M. J. H. Pickrell, secretary, Chicago.

Wednesday, Nov. 21.—The American Association of Importers and Breeders of Belgian Draft Horses, at the Sherman House, at 10 o'clock A. M. J. D. Connor, Jr., secretary, Wabash, Ind.

Wednesday, Nov. 21.—The American Essex Swine-Breeders' Association, at the Sherman House, at 7:30 o'clock P. M. W. M. Wiley, secretary, New Augusta, Ind.

Thursday, Nov. 22.—The Convention of Holstein-Friesian Breeders, at the Grand Pacific Hotel, at 3 o'clock P. M. T. B. Wales, secretary, Iowa City, Ia.

Just Published.

NEW, REVISED and ENLARGED EDITION OF A VALUABLE WORK.

SWINE HUSBANDRY.

A Practical Manual for Breeding, Rearing and Management of Swine, and the Prevention and Treatment of their Diseases,

BY THE

Hon. F. D. COBURN.

ILLUSTRATED.

CONTENTS:--Introductory, Value of the Hog Product, Breeds of Swine, Their Characteristics and Worth, Raising and Fattening Swine, Hog Houses and Pens, Slaughtering, Curing and Preserving, Effects of Cold Weather on Fattening Swine, Some General Observations, Rooting and its Prevention, Ear Mutilation, Ear Marks, Relation between Prices of Corn and Pork, Standards of Excellence and Scale of Points, etc., Diseases of Swine, Practical Information as to their Causes, Symptoms, Prevention and Cure.

Cloth, 12mo.

Price, Post-paid, $1.75.

Orange Judd Company,

751 Broadway,

NEW YORK.

A NEW BOOK

THAT EVERY AMERICAN FAMILY SHOULD OWN.

A Dictionary of American Politics.

NON-PARTISAN.

Comprising accounts of Political Parties, Measures and Men; Explanations of the Constitution; Divisions and Practical Workings of the Government, together with Political Phrases, Familiar Names of Persons and Places, Noteworthy Sayings, etc., etc. By EVERIT BROWN AND ALBERT STRAUSS. This book contains

565 PAGES AND OVER 1000 SUBJECTS.

It is for those who are more or less interested in the politics of the United States, but who have neither time nor opportunity for seeking information in various and out-of-the-way places, that this book has been prepared. The main facts in the political history of the federal government from its foundation to the present moment are given under appropriate headings and in alphabetical order. The formation of the Constitution, its growth and interpretation, have been explained. The rise and fall of parties have been recounted. Famous measures, national movements and foreign relations have received full attention. Especial care has been exercised in describing the practical workings of the government in its various branches, and numerous lists of the more prominent officials are furnished. There will also be found accounts of the origin and meaning of political slang expressions, familiar names of persons and localities, famous phrases and the like.

A FEW OF THE MANY SUBJECTS IN THIS BOOK:

Alabama Claims.
Alien and Sedition Laws.
American Party.
Anti-Monopoly Party.
Area of the United States.
Army of the United States.
Barbary Pirates.
Barnburners.
Bill of Rights.
Black Cockade.
Black Friday.
Black Laws.
Bloody Shirt.
Blue Hen.
Blue Laws.
Boodle.
Border Ruffians.
Broad Seal War.
Brother Jonathan.
Brown, John.
Buckshot War.
Burlingame Treaty.
Burr Conspiracy
Canadian Rebellion.
Canal Ring.
Cast an Anchor to Windward.
Censures of the President.
Cheeseparing.
Cherokee Case.
Chinese Question.
Cipher Dispatches.
Civil Rights Bill.
Civil Service Reform.
Clay Whigs.
Coinage.
Compromise of 1850.
Concord Mob.
Conscience Whigs.
Conservatives.
Constitutional Union Party.
Convention of 1787.
Contraband of War.
Corner Stone Speech.
Credit Mobilier.
Creole Case.
Crittenden Compromise.
Dark Horse.
Dartmoor Massacre.
Davis-Wade Manifesto.
Debt of the United States.
DeGolyer Contract.
Democratic-Republican Party.
Disputed Elections.
Don't give up the Ship.
Dorr Rebellion.
Draft Riots.
Dred Scott Case.
Electoral Commission.
Embargo Act.
Essex Junta.
Farewell Addresses.
Federal Party.
Fenian Brotherhood.
Fifty-four, forty or fight.
Filibusters.
Fishery Treaties.
Forty-Niners.
Free Soil Party.
Fugitive Slave Laws.
Gag Laws.
Gerrymander.
Grangers.
Greenback-Labor Porty.
Hard Cider Campaign.
Hartford Convention.
Indian Wars.
Jay's Treaty.
Kansas-Nebraska Bill.
Ku-Klux Klan.
Land Grants.
Lecompton Constitution.
Liberty Party.
Loco-Focos.
Log Rolling.
Mason and Dixon's Line.
McLeod Case.
Monroe Doctrine.
Morey Letter.
Mormons.
Mulligan Letters.
National Republican Party.
Navigation Laws.
Northwest Boundary.
Nullification.
O Grab Me Act.
Old Hickory.
Pan Electric Scandal.
Paris Monetary Conference.
Peace Congress.
Pensions.
Personal Liberty Party.
Peruvian Guano Troubles.
Pewter Muggers.
Party Platforms.
Popular Sovereignty.
Population of United States.
Presidential Votes.
Progressive Labor Party.
Prohibition.
Protection.
Reconstruction.
Refunding United States Debt.
Republican Party.
Returning Boards.
Rum, Romanism and Rebellion.
Salary Grab.
Secession.
Shinplasters.
Silver Question.
Slavery.
Solid South.
Stalwarts.
Star Route Trials.
State Sovereignty.
Subsidies.
Suffrage.
Surplus.
Tammany.
Tariffs of the United States.
Third Term.
Toledo War.
Treaties of the United States.
Tub Conspiracy.
Tweed Ring.
United Labor Party.
Unit Rule.
Virginius Case.
Wars of the United States.
Whig Party.
Whisky Insurrection.
Wilmot Proviso.
Woman Suffrage.
X. Y. Z. Mission.
Yazoo Fraud.

This book is a treasury of ready reference for politicians, for business men, for every voter, for every boy who will be a voter, for women who may be voters, for every man, woman and child who lives in the United States, who ought to know all that is possible about our glorious institutions and political history. It is printed from plain type, on a good quality of paper, and is nicely bound in cloth. It is fit to adorn any library in the land.

It will be sent by mail, postpaid, on receipt of $1.

What some of our Prominent Public Men say of this Book:

What Senator John Sherman says:

I have to acknowledge the receipt of a copy of your "Dictionary of American Politics." I have looked over it, and find it a very excellent book of reference, which every American family ought to have. The introduction of the important documents of our history, like the Constitution and the Declaration of Independence, will give it great value. It contains in convenient form the elements of American history arranged in alphabetical order.

Very truly yours,
JOHN SHERMAN.

United States Senate, Washington, D. C., June 22, 1888.

What Senator Frank Hiscock says:

I acknowledge the receipt of a copy of the "Dictionary of American Politics." Thanks. It is certainly a very convenient and valuable work of reference.

Yours respectfully,
FRANK HISCOCK.

United States Senate, Washington, D. C., June 30, 1888.

What Governor J. B. Foraker says:

I am in receipt of "A Dictionary of American Politics," which you have kindly sent. I have examined it sufficiently to see that it is a work of great merit, and an important help to every man who is called upon to discuss political questions. I sincerely thank you for remembering me with a copy of it.

Very truly yours,
J. B. FORAKER.

Executive Department, Columbus, Ohio, June 28, 1888.

What Mayor Abram S. Hewitt says:

I have to thank you for a copy of your publication entitled: "A Dictionary of American Politics." I have given it a cursory examination. It appears to me to have been very carefully arranged, and to be the result of very great labor on the part of its editors. So far as I can judge, within the limits of the publication you have included the most important subjects with which the student of politics ought to be familiar. It will certainly be exceedingly useful in the coming political campaign, and I can honestly commend it to those who desire information upon the political history of the country.

Yours respectfully,
ABRAM S. HEWITT.

Mayor's Office, New York, June 21, 1888.

What Congressman Amos J. Cummings says:

I have examined your "Dictionary of American Politics." It is a book of reference valuable to editors, statesmen, and all others interested in politics.

Yours truly,
AMOS J. CUMMINGS.

House of Representatives, Washington, D. C., July 2, 1888.

HOW YOU CAN GET THIS BOOK FREE.

OFFER No. 1.

To any one sending $1.50 for a year's subscription to the AMERICAN AGRICULTURIST, we will send a copy of the above book free and postpaid, providing 10 cents extra is forwarded to pay the mailing expense of the book. This offer is open to both old and new subscribers. Anyone whose subscription has not yet expired, can renew now, and have their subscription extended one year from expiration.

OFFER No. 2.

To anyone who will secure us **two new subscribers** to the AMERICAN AGRICULTURIST, at $1.50 (each subscriber to have a copy of the book by sending 10 cents extra for postage) **we will present one copy,** postpaid.

OFFER No. 3.

For a club of five new subscribers to the AMERICAN AGRICULTURIST, at $1.50, (each subscriber to have a copy of the book by sending 10 cents extra for postage), we will present a copy of the book and a year's subscription to the AMERICAN AGRICULTURIST.

THREE MONTHS FREE to new subscribers!!

To all subscribing under any of the above offers, who are not now on our list, the October, November and December issues of the AMERICAN AGRICULTURIST will be sent free, all such subscribers being dated to January, 1890, as per our offer elsewhere.

All the above offers are **limited to October 31st, 1888.**

Remittances can be made by bank bills, postal notes, money orders, checks, drafts, or by registered letter. Make all drafts, checks and orders payable to Orange Judd Company. Address

ORANGE JUDD COMPANY, Publishers,
751 Broadway, New York City.

The Insect World.

The Merodon Fly.—S. W. Field, Queens Co., N. Y.: The curious cylindrical grub-like pupæ with a long tail-like appendage are those of a two-winged fly, the *Merodon bardus* of Say. The long tail or filament is its respiratory organ, as the larvæ are undoubtedly aquatic, living in ponds and usually in brackish waters. There is a closely allied species which breeds in the salt vats of salt works.

A New Corn Pest.—Prof. S. A. Forbes, State Entomologist of Illinois, reports that he has found corn growing on recently drained land attacked by one of our native snout beetles (*Sphenophorus ochreus*), which has not hitherto been considered as injurious to useful vegetation. The beetle is about half an inch long, with a snout something like that of a curculio, which it thrusts into the stem of the corn, living upon its substance. The insect has been very destructive in some parts of the West.

Mud Wasps for Australasia.—S. C. Vipond, a subscriber in Auckland, New Zealand, desires information about the cultivation of the mud wasp, and the advisability of introducing it for the destruction of crickets. We have plenty of mud wasps and burying wasps that provision their nests with spiders, grasshoppers and cicadas, but the latter kinds of insects appear to be exceedingly numerous even in the presence of their many natural enemies. You might introduce our great burying wasp (*Stizus grandis*) to aid you in destroying the New Zealand crickets, but it is very doubtful if the result would be satisfactory, because the crickets are a hundred times more prolific than the wasps.

May-Flies.—L. A. Knowles, Washington Co., R. I.: The insects you send are known by the common name of May-flies or Ephemerids, although they may not appear in Rhode Island until June. Such names as May-flies, May-beetles and June-bugs are not supposed to indicate that the insects to which they are applied appear in the months indicated in all parts of the country. The common May-beetles of New York State appear in Georgia and Florida in February and March. The Ephemerids or May-flies, as the first name implies, are very short-lived in their imago or perfect state, rarely living but a few hours at the longest and taking no food in their adult stage. As soon as the sexes unite the female drops her eggs in the water, where they hatch, and the larvæ or grubs feed upon minute aquatic insects; consequently these insects may be considered more beneficial than otherwise, purifying the water they inhabit by destroying minute but more abundant species. The two or three long, slender, caudal filaments attached to the abdomen of the May-flies are characteristics which enable almost anyone to identify them wherever found. There are also many fossil species of these insects, or those belonging to closely allied genera.

The Oak Pruner.—R. Bosford, Middlesex Co., Mass.: The insect of which you complain because it cuts off the branches of oak trees during the summer is known as the "Oak Pruner" (*Elaphidion villosum*). In its perfect state it is a slender beetle nearly or quite three-quarters of an inch long, the body is of a dull black color, the wing-covers brown, but the surface is everywhere covered with shortish prostrate gray hairs. The female beetles deposit their eggs on the smaller branches or twigs of the oak and various other kinds of trees, where they hatch and the young grubs bore into the branch and feed on the pith and inner wood until they are about half grown, which usually occurs during the months of July and August. When they have reached this stage the cutting or pruning operation is begun, and it would seem for the sole purpose of aiding the grub or larva to safely descend to the ground and at the same time take along both food and shelter in the shape of the severed branch. The grub cuts off the branch by working from the inside or center outward, remaining during this operation in the part of the twig or branch which is to fall when the cutting is completed, the green leaves on the severed twig acting somewhat like a parachute, and the descent being easy and gentle. By cutting open the severed oak twigs about your place you will be able to find the grubs at work until late in the fall, when some of them may have changed to pupa, but many remain in the larval stage until the following spring.

Blister Beetles.—J. Voorhees, Wilkins Co., Minn.: The large bright green beetles with golden purple wing covers, that have appeared in such vast numbers, devouring the leaves of your navy beans, is a species of Blister beetle and known to entomologists as Nuttall's Cantharis (*Cantharis NuttaNi*). This insect is a native of Minnesota and the regions west and a few degrees south of your State. It was named and described early in the present century by Thomas Say, who has been called the "Father of American Entomology." There are more than one hundred and fifty different species of blister beetles native of the United States, all of them more or less injurious to wild and cultivated plants. Several species attack the potato, and sometimes they are fully as destructive as the Colorado potato beetle. Others feed on beans, asters, golden rod, and even the leaves of apple trees. The most destructive species, among which we may place the one you are now contending with, move in immense swarms, and when they alight for feeding they devour vegetation with great rapidity, unless disturbed; but when this occurs they will take to their wings and depart, provided conditions are favorable for flight. Farmers in the West who have learned this peculiarity of the blister beetles get rid of them by driving the swarms from field to field, or on to meadows of hay or straw, then setting them on fire. The driving should take place during pleasant weather and in the middle of the day. Poisons of various kinds have been tried for these insects, but with indifferent success.

Scale Insects in Hawaii.—John Emmeluth, of Honolulu, Hawaii Island, writes us: "I have a young orchard of tropical and semi-tropical fruits and am very much troubled with plant lice, including those mentioned in an article in your April number; also what I shall, for want of a better name, call scale bugs. I have counted from fifty to one hundred and ninety insects under one scale (with a microscope), and between them all they play sad havoc with the young trees. What would you consider the most effective remedy? Do you think the ladybugs mentioned in the April number would adapt themselves to our climate? Our extremes of temperature in thirty years past have been fifty-four and ninety-seven degrees Fahrenheit." The scale insects are readily destroyed by alkaline and soapy solutions, provided these are applied soon after the young leave the mother scale and before the former have become covered with a hard and impervious shell or scale. The orchardist needs to watch these pests and determine the proper time to apply insecticides to insure the best results, then if he works promptly he will soon become master of the situation. For the various species of coccidæa or mealy bugs we do not know of anything better than kerosene emulsions, so frequently recommended for destroying the orange scale. The kerosene emulsion is made by dissolving one-half pound pure bar soap in one gallon of hot water; when the soap is dissolved add two gallons of kerosene and churn until the emulsion forms a cream. When cool add thirty gallons of cold water and apply to the trees with a garden pump and through the nozzle to divide the liquid into a fine spray. We do not think that the ladybug would prove voracious enough to subdue the scale and other similar insects infesting your trees. The ladybugs or *coccinelidæ* multiply very slowly, while all the scale pests increase rapidly.

Matters of Business.

Farm Drainage.—Messrs. Jackson Brothers, proprietors of the New York State Drain Tile Works, Albany, N. Y., have issued a comprehensive little work on Drainage. It shows why and how to drain, treating the subject in a very concise and clear style. The work is sent free on application.

A Good Pocket Knife.—A good jack-knife is like a good wife in many respects. It is bright and sharp; it holds its temper under all circumstances, and it will shut up when it is wanted to. That is the kind of a knife made by Maher & Grosh, 4th Street, Toledo, Ohio, who will send a fine two-bladed one free upon receipt of fifty cents.

Artistic Work.—One of the most elegant and artistic specimens of the printer's art which has recently fallen under our notice, is a pamphlet published by T. C. Evans, the enterprising advertising agent, 294 and 296 Washington Street, Boston. The little work contains lists of "the choicest" one thousand serial publications in the United States.

A Great Milk Record.—It is reported upon reliable authority that the Holstein-Friesian cow, Shadeland Boon, owned by Powell Bros., of Springboro, Pa., produced 1,772½ pounds of milk, from which were made 125 pounds and twelve ounces of unsalted butter in thirty-one days, from June 6th to July 6th inclusive. This was at the rate of one pound of butter from fourteen and nine hundredths pounds of milk. The milking and all subsequent operations were done by disinterested and reliable persons.

Peat Moss Stable Bedding.—This material is the sphagnum moss of living peat bogs in Germany and Holland, cut up, dried, sifted to remove dirt and sand, and baled. The bales weigh three hundred pounds and upward. The importations to this country in 1887 amounted to thirty thousand bales. It is a good absorbent, and very comfortable as bedding, elastic, favorable to the hoofs of horses, and in many ways preferable to straw for the purpose. It is imported and sold by Mr. A. W. Nitsch, 68 Wall Street, New York.

To Prepare Ensilage.—The Silver & Deming Manufacturing Co., of Salem, Ohio, have issued an extremely neat little volume containing illustrated descriptions of their improved Ensilage and Feed Cutters. The former are operated by steam or horse power; cut the ensilage to any desirable length, and convey it to the silo. The Feed Cutters may be run by power or hand. The book also contains valuable practical hints regarding the cultivation of ensilage crops and the construction and management of silos. Sent free upon application.

Excursions to the Northwest.—Those who have read our articles about the Red River Valley, and the still more remote Northwest, will be interested to learn that the St. Paul, Minneapolis & Manitoba Railroad Company has organized a series of harvest excursions which will afford opportunities for visiting Northern Minnesota, Dakota and the newly opened reservation in Montana. The excursions leave St. Paul, Sept. 11th and 25th, and October 9th and 23d. The tickets are sold at less than half price and are good for thirty days. F. I. Whitney, St. Paul, is the general passenger and ticket agent.

Energetic Action.—We are glad to learn that Messrs. Gere, Platt & Johnson, of Owego, N. Y., are pushing forward the work of rebuilding their extensive factory, which was destroyed by fire on the 19th of June last. They had been running their large and well-equipped works to their full capacity night and day, to keep up with the demand for the Champion wagon, when the calamitous fire swept all away. A new and larger site was purchased and works with capacity double that of the old factory are being pushed to completion. They expect to be ready to resume the shipments of their Champion wagons by the first of November at the latest.

For Poultry Keepers and Sausage Makers.—The Bone, Shell and Corn Mill made by the Enterprise Manufacturing Co., of Philadelphia, is a very convenient and profitable appliance to have around a poultry farm. It crushes bone and oyster shells, and grinds corn to any desired fineness. The Meat Chopper, made by the same company, serves equally well to prepare animal food for fowls and to chop sausage meat. It does not grind the meat into a sticky mass, but cuts it into the best shape. It is admirably accompanied by a Sausage Stuffer, which projects the completed articles in "linked sweetness long drawn out." All three are well made and reliable machines.

Wonderful Progress in Hay Presses.—We received a call from Mr. Charles E. Whitman, president of the Whitman Agricultural Co., of St. Louis, Mo. He states that the hay press business is booming with his company, and that the new belt power press recently introduced, is a wonder. It is successfully operated by a two-horse railway power, and will bale twenty tons of hay in ten hours. This will be gratifying news to Eastern farmers who wish to bale their hay in barns, and fill a long felt want. Their horse lever press has been well and favorably known throughout this country and in many foreign lands.

State, County and Other Fairs in 1888.

PREPARED EXPRESSLY FOR THE AMERICAN AGRICULTURIST.

[Copyright by the Orange Judd Co.—Other periodicals will give credit when copying this list.]

STATE, PROVINCIAL, Etc.

Alabama	Montgomery	Oct. 22-27
Am. Institute	New York	Oct. 3-Dec. 8
Arkansas	Pine Bluff	Oct. 9-13
Augusta National	Aug'a, Ga.	Oct. 10-Nov. 17
California	Sacramento	Sept. 3-15
Colorado	Pueblo	Oct. 2-6
Connecticut	Meriden	Sept. 11-14
Dakota	Huron	Sept. 24-30
Del. & Md. Peninsula 1st Horticultural Exhibition	Wilmington	Sept. 18-21
Delaware	Dover	Sept. 24-29
Georgia	Macon	Oct. 10-19
Illinois	Olney	Sept. 24-28
Illinois Fat Stock	Chicago	Nov. 13-24
Indiana	Indianapolis	Sept. 17-22
International	Buffalo	Sept. 4-14
Iowa	Des Moines	Aug. 31-Sep. 7
Kansas	Topeka	Sept. 17-22
Kentucky	Lexington	Aug. 28-Sep. 1
Louisiana	Baton Rouge	Oct. 1-6
Louisiana	Shreveport	Nov. 5-10
Maryland	Hagerstown	Oct. 16-19
Maine	Lewiston	Sept. 11-14
Mass. Bay State	Springfield	Oct. 4-9
Mass. Horticult'l	Boston	Sept. 18-21
Michigan	Jackson	Sept. 10-14
Minnesota	St. Paul	Sept. 10-15
Mississippi	Jackson	Oct. 8-13
Missouri	St. Louis	Oct. 1-6
Montana	Helena	Aug. 20-25
Nebraska	Lincoln	Sept. 7-14
N. England, Mass.	Worcester	Sept. 4-7
N. Hamp. Grange	Tilton	Sept. 12-14
New Jersey	Trenton	Oct. 2-5
New Jersey	Waverly	Sept. 17-21
New York	Elmira	Sept. 17-22
North Carolina	Raleigh	Oct. 16-20
Ohio Centennial	Columbus	Sept. 4-19
Ohio Centennial Exposition of the Ohio Valley	Cincinnati	July 4-Oct. 27
Ontario, Provin'l	Kingston	Sept. 10-15
Oregon	Salem	Sept. 17-21
Pennsylvania	Philadelphia	Sept. 3-15
Rhode Island	Providence	Sept. 24-28
South Carolina	Columbia	Nov. 12-16
Tennessee	Nashville	Sept. 22-29
Texas	Dallas	Oct. 11-31
Vermont	Burlington	Sept. 11-14
Virginia	Richmond	Oct. 3-Nov. 21
West Virginia	Wheeling	Aug. 27-31
Wisconsin	Madison	Sept. 17-21
Wisconsin Indus.	Racine	Sept. 4-7
Wyoming	Cheyenne	Sept. 25-28

COUNTY AND DISTRICT FAIRS.

ALABAMA.

Limestone	Athens	Oct. 3-6
Madison	Huntsville	Oct. 9-13
Montgomery	Montgomery	Oct. 22

ARIZONA.

Maricopa	Phœnix	Oct. 15-20

ARKANSAS.

Independence	Batesville	Oct. 23-26
Jefferson	Pine Bluff	Oct. 9-13
Phillips	Helena	Oct. 16-20
White	Judsonia	Oct. 10-12

CALIFORNIA.

Butte	Chico	Aug. 21-25
El Dorado	Placerville	Aug. 21-25
Lassen	Susanville	Sept. 24-28
Santa Clara	San Jose	Sept. 24-29
San Joaquin	Stockton	Sept. 18-29
Siskiyou	Yreka	Oct. 3-7
Sonoma	Santa Rosa	Aug. 13-18
Yuba	Marysville	Aug. 28-Sep. 1

COLORADO.

Gunnison	Gunnison	Oct. 1-6
Larimer	Ft. Collins	Sept. 11-14
Weld	Greeley	Oct. 2-5

CONNECTICUT.

Fairfield	Danbury	Oct. 2-6
Fairfield	Huntington	Sept. 25-27
Fairfield	Norwalk	Sept. 18-21
Hartford	Berlin	Sept. 26
Hartford	Bristol	Sept. 24-28
Hartford	Collinsville	Sept. 19-20
Litchfield	Harwinton	Oct. 3
Litchfield	New Milford	Sept. 11-13
Litchfield	Watertown	Sept. 18-20
Middlesex	Chester	Oct. 3
Middlesex	Clinton	Oct. 10
Middlesex	Killingworth	Sept. 26
New Haven	Meriden	Sept. 11-14
New Haven	Guilford	Sept. 26
New London	Norwich	Sept. 18-20
Tolland	Rockville	Oct. 2-4
Windham	Brooklyn	Sept. 18-20
Windham	So. Woodstock	Sep. 11-13
Windham	Willimantic	Sept. 26-28

CONNECTICUT DISTRICT.

Hartford	Southington	Sept. 18-20
Hartford	Simsbury	Oct. 3-4

DAKOTA.

Beadle	Mitchell	Oct. 24-30
Cass	Tower City	Sept. 25-27
Charles Mix	Castalia	Sept. 17-19
Clay	Vermillion	Sept. 18-20
Davison	Mitchell	Sept. 24-28
Day	Webster	Sept. 13-15
Deuel	Gary	Sept. 17-19
Grant	Milbank	Oct. 2-4
Lawrence	Spearfish	Sept. 18-21
Spink	Ashton	Sept. 18-21
Turner	Parker	Sept. 19-21

IDAHO.

Bingham	Eagle Rock	Sept. 13-15

ILLINOIS.

Adams	Camp Point	Sept. 3-7
Boone	Belvidere	Sept. 4-7
Brown	Mt. Sterling	Aug. 27-31
Bureau	Princeton	Sept. 11-15
Carroll	Mt. Carroll	Sept. 10-14
Champaign	Champaign	Aug. 21-24
Christian	Assumption	Sept. 5-7
Christian	Pana	Sept. 11-15
Coles	Charleston	Sept. 11-15
Crawford	Robinson	Sept. 11-15
Cumberland	Toledo	Sept. 18-21
DeKalb	Sycamore	Sept. 11-14
DeWitt	Clinton	Sept. 10-14
DeWitt	Farmer City	Aug. 28-31
Douglas	Camargo	Sept. 18-21
DuPage	Wheaton	Sept. 11-13
Edgar	Paris	Sept. 3-7
Edwards	Albion	Aug. 18-21
Effingham	Watson	Sept. 4-7
Fayette	Vandalia	Sept. 18-21
Ford	Piper City	Sept. 18-21
Franklin	Benton	Sept. 19-22
Fulton	Canton	Sept. 4-7
Fulton	Avon	Sept. 18-21
Gallatin	Shawneet'n Aug.	28-Sep. 1
Greene	Carrollton	Oct. 16-19
Hancock	Carthage	Sept. 10-14
Hancock	Warsaw	Aug. 21-24
Hardin	Elizabethtown	Aug. 7-10
Henderson	Biggsville	Sept. 4-7
Henry	Kewanee	Sept. 3-7
Henry	Cambridge	Aug. 27-31
Iroquois	Milford	Aug. 21-24
Iroquois	Watseka	Aug. 13-17
Jasper	Newton	Sept. 11-14
Jefferson	Mt. Vernon	Sept. 18
Jersey	Jerseyville	Oct. 9-12
Jo Daviess	Warren	Sept. 18-22
Jo Daviess	Galena	Oct. 2-5
Kankakee	Kankakee	Sept. 18-21
Kendall	Yorkville	Sept. 11-14
Knox	Knoxville	Sept. 3-7
Lake	Libertyville	Sept. 19-22
Lake	Waukegan	Sept. 10-15
LaSalle	Mendota	Sept. 3-8
Livingston	Fairbury	Sept. 2-7
Logan	Lincoln	Aug. 27-31
Logan	Atlanta	Sept. 4-7
Macoupin	Carlinville	Sept. 4-7
Marion	Salem	Sept. 18-21
Marshall	Wenona	Sept. 10-14
Massac	Metropolis	Oct. 10-13
McDonough	Macomb	Aug. 27-31
McHenry	Marengo	Sept. 18-21
McHenry	Woodstock	Sept. 11-14
McLean	Bloomington	Sept. 11-14
Menard	Petersburg	Sept. 4-7
Mercer	Aledo	Sept. 18-21
Montgomery	Hillsboro	Sept. 18-21
Moultrie	Sullivan	Sept. 3-7
Ogle	Oregon	Sept. 18-21
Ogle	Rochelle	Sept. 14-17
Peoria	Dunlap	Sept. 5-7
Perry	Pinckneyville	Oct. 2-5
Piatt	Monticello	Aug. 13-17
Pike	Griggsville	Aug. 14-17
Pike	Pittsfield	Aug. 21-24
Pope	Golconda	Oct. 2-5
Randolph	Chester	Sept. 25-28
Rock Island	Coe	Sept. 5-7
Rock Island	Port Byron	Sept. 5-7
Saline	Eldorado	Aug. 21-24
Saline	Harrisburg	Oct. 2-5
Schuyler	Rushville	Aug. 21-24
Shelby	Shelbyville	Sept. 18-22
St. Clair	Belleville	Sept. 11-14
Stark	Toulon	Sept. 11-14
Stark	Wyoming	Aug. 21-24
Stephenson	Freeport	Sept. 3-7
Tazewell	Mackinaw	Aug. 28-31
Tazewell	Delevan	Sept. 10-14
Union	Anna	Aug. 28-31
Union	Jonesboro	Sept. 11-14
Vermilion	Catlin	Aug. 21-25
Wabash	Mt. Carmel	Sept. 5-8
Warren	Monmouth	Sept. 11-14
White	Carmi	Sept. 4-8
Whiteside	Morrison	Sept. 4-7
Whiteside	Albany	Aug. 28-31
Williamson	Marion	Sept. 25-28
Winnebago	Rockford	Aug. 27-31

ILLINOIS DISTRICT.

Hancock	La Harpe	Sept. 3-7
Iroquois	Milford	Aug. 21-24
Jackson	Carbondale	Oct. 8-12
McDonough	Bushnell	Aug. 21-24
Vermilion	Hoopeston	Aug. 27-31
Woodford	El Paso	Sept. 17-21

INDIANA.

Allen	Fort Wayne	Sept. 4-7
Blackford	Hartford City	Aug. 22-25
Boone	Lebanon	Aug. 20-24
Cass	Logansport	Aug. 27-31
Clark	Charlestown	Sept. 5-10
Clinton	Frankfort	Aug. 27-31
Daviess	Washington	Oct. 1-6
Dearborn	Lawrenceburg	Aug. 21-25
Decatur	Greensburg	Aug. 28-31
Delaware	Muncie	Aug. 21-25
Elkhart	Goshen	Sept. 4-7
Fulton	Rochester	Sept. 5-8
Gibson	Princeton	Sept. 10-15
Grant	Marion	Aug. 28-31
Greene	Linton	Oct. 1-6
Hamilton	Noblesville	Aug. 27-31
Hancock	Greenfield	Aug. 21-24
Harrison	Corydon	Aug. 27-31
Henry	New Castle	Aug. 14-18
Howard	Kokomo	Sept. 10-15
Huntington	Huntington	Sept. 25-29
Jackson	Brownstown	Sept. 18-21
Jackson	Seymour	Sept. 11-15
Jasper	Rensselaer	Aug. 21-24
Jay	Portland	Sept. 25-28
Jefferson	Wirt Station	Sept. 4-6
Jennings	No. Vernon	Aug. 7-10
Knox	Vincennes	Oct. 8-13
Lagrange	Lagrange	Sept. 24-27
Lake	Crown Point	Sept. 18-21
Laporte	Laporte	Oct. 2-6
Lawrence	Bedford	Sept. 11-15
Madison	Anderson	Sept. 3-7
Monroe	Bloomington	Sept. 4-7
Montgomery	Crawfordsville	Sep. 10-14
Newton	Morocco	Sept. 11-14
Noble	Ligonier	Sept. 11-14
Parke	Rockville	Aug. 20-24
Perry	Rome	Oct. 1-5
Pike	Petersburg	Sept. 3-7
Porter	Valparaiso	Sept. 21-24
Posey	New Harmony	Sept. 17-21
Randolph	Winchester	Aug. 28-31
Ripley	Osgood	Aug. 14-18
Rush	Rushville	Sept. 11-15
Shelby	Shelbyville	Sept. 4-8
Spencer	Rockport	Sept. 3-8
Steuben	Angola	Sept. 18-21
Sullivan	Sullivan	Sept. 10-15
Tippecanoe	Lafayette	Sept. 3-8
Tipton	Tipton	Aug. 13-17
Vermillion	Eugene	Aug. 20-24
Vigo	Terre Haute	Aug. 27-31
Wabash	Wabash	Sept. 11-14
Warren	West Lebanon	Aug. 14-19
Warrick	Boonville	Aug. 27-Sept. 1
Washington	Salem	Aug. 27-31
Wayne	Dalton	Sept. 11-14

INDIANA DISTRICT.

Dekalb	Waterloo	Sept. 24-28
Fountain	Covington	Sept. 24-28
Grant	Fairmount	Sept. 24-28
Hamilton	Carmel	Aug. 21-24
Hamilton	Arcadia	Aug. 7-11
Hamilton	Sheridan	Sept. 3-7
Hendricks	No. Salem	Sept. 3-7
Henry	Middletown	Aug. 7-10
Henry	Knightstown	Aug. 28-31
Howard	Poplar Grove	Oct. 1-5
Huntington	Warren	Sept. 4-8
Jackson	Seymour	Sept. 11-15
Jasper	Francisville	Sept. 25-28
Jasper	Remington	Aug. 28-31
Johnson	Urmeyville	Oct. 4-6
Kosciusko	Warsaw	Sept. 10-15
Marion	Acton	Aug. 28-31
Marion	Lawrence	Sept. 4-7
Martin	Loogootee	Sept. 25-29
Miami	Macy	Sept. 26-29
Miami	Xenia	Aug. 21-24
Montgomery	New Ross	Aug. 13-18
Noble	Kendallville	Oct. 1-5
Orange	Orleans	Sept. 26-29
Parke	Bridgeton	Aug. 20-24
St. Joseph	So. Bend	Sept. 11-14
Switzerland	E. Enterprise	Sept. 11-14
Vermillion	Newport	Oct. 1-5
Wabash	No. Manchester	Oct. 2-5
Washington	Pekin	Sept. 11-15
Wayne	Dalton	Sept. 11-14

IOWA.

Adams	Corning	Sept. 17-22
Audubon	Audubon	Sept. 11-14
Benton	Vinton	Sept. 18-21
Boone	Ogden	Sept. 11-14
Buchanan	Independence	Sept. 11-14
Buena Vista	Alta	Sept. 12-14
Butler	Allison	Sept. 11-13
Calhoun	Rockwell City	Sept. 25-27
Cass	Atlantic	Sept. 11-14
Cerro Gordo	Mason City	Sept. 18-20
Chickasaw	New Hampton	Sept. 12-14
Clarke	Osceola	Sept. 11-14
Clay	Spencer	Sept. 19-21
Clayton	Garnerville	Sept. 25-28
Clayton	National	Sept. 25-28
Clinton	DeWitt	Sept. 18-21
Crawford	Denison	July 31-Aug. 2
Dallas	Adel	Sept. 18-21
Davis	Bloomfield	Aug. 21-24
Decatur	Leon	Sept. 26-28
Delaware	Manchester	Sept. 11-14
Des Moines	Burlington	Sept. 10-14
Fayette	West Union	Sept. 4-7
Floyd	Charles City	Sept. 12-14
Franklin	Hampton	Sept. 11-14
Greene	Jefferson	Aug. 28-31
Grundy	Grundy Center	Sept. 11-13
Guthrie	Menlo	Sept. 25-28
Guthrie	Guthrie Cen	Sept. 25-29
Hancock	Britt	Sept. 18-20
Hardin	Eldora	Sept. 18-21
Harrison	Missouri Valley	Oct. 1-4
Henry	Mt. Pleasant	Aug. 28-30
Howard	Cresco	Sept. 11-14
Humboldt	Humboldt	Sept. 12-14
Iowa	Marengo	Sept. 13-15
Jackson	Maquoketa	Aug. 21-24
Jasper	Newton	Sept. 11-14
Jefferson	Fairfield	Sept. 18-20
Johnson	Iowa City	Aug. 27-30
Jones	Monticello	Aug. 27-31
Keokuk	Sigourney	Aug. 28-31
Kossuth	Algona	Sept. 19-20
Lee	Donnellson	Sept. 5-7
Louisa	Wapello	Aug. 28-31
Lucas	Chariton	Sept. 12-14
Madison	Winterset	Sept. 24-27
Mahaska	Oskaloosa	Aug. 21-24
Marion	Knoxville	Aug. 28-31
Mills	Malvern	Sept. 18-20
Mitchell	Osage	Sept. 12-14
Montgomery	Red Oak	Sept. 10-14
Osceola	Sibley	Sept. 18-20
Page	Clarinda	Sept. 3-7
Palo Alto	Emmetsburg	Oct. 3-5
Polk	Des Moines	Aug. 31-Sep. 7
Ringgold	Mt. Ayr	Sept. 7-12
Sac	Sac City	Aug. 28-30
Shelby	Harlan	Sept. 17-20
Story	Nevada	Sept. 11-14
Taylor	Bedford	Sept. 11-14
Union	Afton	Sept. 11-14
Van Buren	Keosauqua	Sept. 12-14
Wapello	Ottumwa	Aug. 13-17
Warren	Indianola	Oct. 2-5
Washington	Washington	Aug. 21-24
Wayne	Corydon	Aug. 27-31
Webster	Fort Dodge	Sept. 11-14
Winnebago	Forest City	Sept. 25-26
Winneshiek	Burr Oak	Aug. 28-31
Wright	Clarion	Sept. 4-7

IOWA DISTRICT.

Adams	Nevinville	Sept. 11-14
Appanoose	Moulton	Sept. 11-14
Carroll	Manning	Sept. 11-14
Clayton	Strawberry Pt	Sept. 18-21
Cedar	Mechanicsv'le	Sept. 11-14
Harrison	Dunlap	Sept. 26-28
Henry	Winfield	Sept. 4-7
Keokuk	Richland	Aug. 28-31
Lee	West Point	Sept. 11-14
Lee	Keokuk	Aug. 7-10
Mahaska	New Sharon	Sept. 18-20
Muscatine	West Liberty	Sept. 11-13
O'Brien	Sheldon	Sept. 5-7
Page	Shenandoah	Sept. 11-14
Poweshiek	Brooklyn	Aug. 30-Sept. 1
Sac	Odebolt	Sept. 17-20
Scott	Mt. Joy	Sept. 11-14
Tama	Traer	Sept. 11-13
Van Buren	Milton	Aug. 28-31
Wapello	Agency	Oct. 2-5
Wayne	Lineville	Sept. 11-14
Wayne	Seymour	Sept. 24-28

KANSAS.

Anderson	Garnett	Aug. 28-31
Bourbon	Fort Scott	Sept. 11-14
Brown	Hiawatha	Sept. 4-7
Chase	Elmdale	Sept. 26-28
Chase	Cottonw'd Falls	Sept. 26-28
Cherokee	Columbus	Oct. 11-14
Cheyenne	Wano	Sept. 15-18
Cheyenne	St. Francis	Sept. 26-29
Clay	Clay Center	Sept. 4-7
Coffey	Burlington	Sept. 10-14
Cowley	Winfield	Sept. 3-7
Crawford	Girard	Sept. 25-28
Davis	Junction City	Sept. 20-22
Dickinson	Hope	Sept. 18-21
Doniphan	Troy	Sept. 25-28
Elk	Howard	Sept. 19-21
Ellis	Hays City	Oct. 2-4
Franklin	Ottawa	Sept. 24-28
Harvey	Newton	Sept. 11-14
Jefferson	Oskaloosa	Sept. 11-14
Jewell	Mankato	Sept. 18-21
Linn	LaCygne	Sept. 4-7
Linn	Mound City	Sept. 17-21
Linn	Pleasanton	Sept. 11-14
Marion	Peabody	Sept. 5-7
Mitchell	Cawker City	Sept. 25-28
Montgomery	Independence	Sept. 4-8
Morris	Council Grove	Sept. 25-28
Nemaha	Seneca	Sept. 18-21
Nemaha	Sabetha	Aug. 28-31
Osage	Burlingame	Sept. 11-14
Osborne	Osborne	Sept. 11-14
Ottawa	Minneapolis	Sept. 25-28
Phillips	Phillipsburg	Sept. 18-21
Pottawatomie	Wamego	Sept. 4-7
Pratt	Pratt City	Sept. 4-7
Reno	Hutchinson	Oct. 2-5
Riley	Manhattan	Sept. 18-21
Rooks	Plainville	Sept. 25-28
Rush	La Crosse	Sept. 19-21
Saline	Salina	Sept. 25-28
Sedgwick	Wichita	Aug. 27-Sept. 1
Smith	Smith Center	Sept. 19-21
Washington	Greenleaf	Sept. 12-14
Woodson	Neosho Falls	Sept. 24-29

KENTUCKY.

Adair	Columbia	Aug. 21-24
Anderson	Lawrencebu'h	Aug. 21-24
Bourbon	Paris	Sept. 4-8
Boyle	Danville	Aug. 7-10
Campbell	Alexandria	Sept. 4-8
Christian	Hopkinsville	Oct. 3-6
Crittenden	Marion	Oct. 16-20
Daviess	Owensboro	Oct. 9-14
Hardin	Elizabethtown	Sept. 11-14
Hart	Horse Cave	Sept. 18-21
Henderson	Henderson	Oct. 2-6
Hopkins	Madisonville	Oct. 10-13
Jefferson	Fern Creek	Aug. 28-30
Madison	Kirksville	July 27-28
Mason & Bracken	Germantown	Oct. 10-13
Mason	Maysville	Aug. 22-25
Mercer	Harrodsburg	Aug. 14-17
Muhlenberg	Greenville	Oct. 17-20
Nelson	Bardstown	Sept. 4-8
Ohio	Hartford	Oct. 3-6
Pulaski	Somerset	Sept. 11-14
Union	Uniontown	Aug. 14-18
Shelby	Shelbyville	Aug. 28-31
Warren	Bowling Green	Sept. 5-8

MAINE.

Androscoggin	Lewiston	Sept. 11-14
Aroostook	Houlton	Sept. 27-28
Cumberland	Gorham	Sept. 18-20
Cumberland	Gray Corner	Sept. 18-20
Cumberland	Bridgton	Oct. 10-15
Kennebec	Waterville	Sept. 18-19
Kennebec	Readfield	Sept. 25-27
Knox	Rockland	Sept. 18-21
Lincoln	Damariscotta	Sept. 25-28
Oxford	South Paris	Oct. 2-4
Penobscot	Bangor	Aug. 28-31
Penobscot	Exeter	Sept. 25-27
Penobscot	Lee	Oct. 4-5
Sagadahoc	Topsham	Oct. 9-11
Somerset	Skowhegan	Sept. 18-20
Washington	Cherryfield	Sept. 13-14
Washington	Machias	Sept. 19-20
York	Saco	Sept. 25-28

MARYLAND.

Baltimore	Timonium	Sept. 4-7
Cecil	Elkton	Oct. 2-5
Frederick	Frederick	Oct. 9-12
Harford	Bel Air	Oct. 9-12
Kent	Worton	Oct. 9-12
Talbot	Easton	Oct. 18-21

MASSACHUSETTS.

Barnstable	Barnstable	Sept. 25-26
Berkshire	Gt. Barrington	Sept. 26-28

Berkshire	North Adams	Sept. 18-20
Bristol	Taunton	Sept. 25-27
Dukes	West Tisbury	Oct. 2-4
Essex	Peabody	Sept. 25-26
Franklin	Charlemont	Sept. 13-14
Franklin	Greenfield	Sept. 27-28
Hampden	Palmer	Sept. 11-12
Hampshire	Northampton	Oct. 3-4
Middlesex	Concord	Sept. 25-26
No. Middlesex	Lowell	Sept. 19-20
Plymouth	Bridgewater	Sept. 19-21
Plymouth	Hingham	Sept. 25-26
Plymouth	Marshfield	Sept. 12-14
Suffolk	Boston	Sept. 18-21
Worcester	Athol	Sept. 18-19
Worcester	Barre	Sept. 27-28
Worcester	Fitchburg	Sept. 25-26
Worcester	Sturbridge	Sept. 13-14
Worcester	Uxbridge	Sept. 25-26
Worcester	Worcester	Sept. 4-7

MASSACHUSETTS DISTRICT.

Hampshire	Middlef'd,Highl'd.	Se.5-6

MICHIGAN.

Allegan	Plainwell	Sept. 23-29
Allegan	Allegan	Oct. 2-5
Antrim	Bellaire	Sept. 24-26
Barry	Hastings	Sept. 25-28
Bay	Bay City	Sept. 25-27
Berrien	Niles	Sept. 18-21
Branch	Coldwater	Sept. 24-28
Calhoun	Marshall	Oct. 2-5
Clinton	St. John's	Oct. 2-5
Clinton	Ovid	Oct. 9-12
Eaton	Charlotte	Oct. 4-7
Eaton	Eaton Rapids	Oct. 2-4
Genesee	Flint	Sept. 17-21
Genesee	Fentonville	Oct. 2-5
Grand Traverse	Traverse City	Sep. 18-20
Gratiot	Ithaca	Sept. 25-28
Ingham	Stockbridge	Oct. 2-4
Ionia	Hubbardston	Sept. 18-21
Ionia	Ionia	Sept. 25-28
Isabella	Mt. Pleasant	Sept. 25-28
Kent	Grand Rapids	Sep. 17-21
Lapeer	Lapeer	Sept. 24-27
Lapeer	Hadley	Oct. 2-4
Lenawee	Adrian	Sept. 25-28
Macomb	Armada	Oct. 3-5
Macomb	Romeo	Oct. 9-12
Midland	Midland	Sept. 4-6
Monroe	Petersburgh	Oct. 2-5
Montcalm	Greenville	Oct. 2-5
Oakland	Milford	Oct. 9-11
Oakland	Pontiac	Sept. 25-28
Oakland	Rochester	Oct. 2-5
Oceana	Hart	Sept. 11-14
Ogemaw	West Branch	Sept. 25-27
Osceola	Evart	Sept. 26-28
Ottawa	Berlin	Sept. 25-28
St. Joseph	Centreville	Sept. 18-21
Tuscola	Vassar	Sept. 25-28
Washtenaw	Ypsilanti	Sept. 18-21
Wayne	Plymouth	Sept. 25-29

MINNESOTA.

Anoka	Anoka	Sept. 15-17
Blue Earth	Garden City	Sept. 5-7
Carver	Carver	Sept. 28-29
Clay	Glyndon	Oct. 2-4
Cottonwood	Windom	Oct. 3-5
Dakota	Farmington	Sept. 26-28
Faribault	WinnebagoCity	Sep.26-28
Hubbard	Park Rapids	Sept.12-13
McLeod	Hutchinson	Sept. 18-21
Mower	Austin	Sept. 4-6
Nicollet	St. Peter	Sept. 20-22
Olmstead	Rochester	Sept. 3-8
Ramsey	Hamline	Sept. 10-15
Sibley	Arlington	Sept. 26-28
Scott	Shakopee	Oct. 1-3
Stearns	St. Cloud	Sept. 18-22

MISSISSIPPI.

Lincoln	Brookhaven	Oct. 16

MISSOURI.

Atchison	Tarkio	Aug. 28-31
Audrain	Mexico	Aug. 7-11
Buchanan	St. Joseph	Sept. 10-15
Callaway	Fulton	Aug. 14-18
Cass	Belton	Aug. 28-31
Charlton	Keytesville	Oct. 2-6
Dallas	Buffalo	Sept. 12-15
Franklin	Washington	Sept. 6-8
Greene	Springfield	Sept. 3-8
Henry	Clinton	Sept. 5-8
Jackson	Kansas City	Sept. 17-22
Jasper	Sarcoxie	Oct. 2-6
Johnson	Holden	Aug. 21-24
Lafayette	Higginsville	Aug. 21
Lawrence	Mt. Vernon	Sept. 25-28
Lewis	La Grange	Aug. 29-31
Linn	Brookfield	Sept. 26-29
Livingston	Avalon	Sept. 18-21
Marion	Palmyra	Oct. 9-13
Marion	Hannibal	Aug. 14-18
Monteau	California	Sept. 18-21
Monroe	Paris	Aug. 28-31
Montgomery	Montgomery City	Aug. 28-Sept. 1
Nodaway	Maryville	Aug. 20-25
Pettis	Sedalia	Aug. 14-18
Platte	Platte City	Aug.28-Sep.1
Putnam	Unionville	Sept. 12-15
Saline	Marshall	July 31-Aug. 4
Scotland	Memphis	July 25-26
Shelby	Shelbina	Sept. 4-7
St. Charles	St. Charles	Sept. 11-13
St. Francois	Farmingham	Sept. 18-21
St. Louis	Creve Cœur L'e	Se.11-14
Sullivan	Milan	Sept. 5-8

MISSOURI DISTRICT.

Boone	Columbia	Aug. 21-25
Caldwell	Hamilton	Aug. 27-30
Grundy	Trenton	Sept. 11-14
Harrison	Ridgeway	Aug.30-Sept.1
Holt	Maitland	Aug. 27-31
Lewis	Williamstown	Aug.20-25
Moniteau	Tipton	Aug. 29-Sept. 1
Ray	Lawson	Aug. 21-24

NEBRASKA.

Adams	Hastings	Sept. 4-7
Antelope	Neligh	Sept. 12-14
Brown	Long Pine	Sept. 25-28
Buffalo	Kearney	Sept. 18-21
Clay	Clay Center	Sept. 25-28
Cedar	Hartington	Sept. 18-20
Colfax	Schuyler	Sept. 19-21
Custer	Broken Bow	Sept. 21-24
Dawson	Plum Creek	Sept. 25-28
Dixon	Ponca	Sept. 11-14
Dodge	Fremont	Oct. 2-5
Fillmore	Geneva	Sept. 25-28
Franklin	Franklin	Sept. 20-22
Furnas	Beaver City	Sept. 18-20
Gage	Beatrice	Sept. 4-7
Gage	Blue Springs	Sept. 18-21
Greeley	Greeley Centre	Sept. 4-6
Hall	Grand Island	Sept. 18-21
Hamilton	Aurora	Sept. 18-21
Hayes	Hayes Centre	Sept. 4-6
Hitchcock	Culbertson	Sept. 26-28
Jefferson	Fairbury	Sept. 25-28
Johnson	Tecumseh	Sept. 18-21
Kearney	Minden	Sept. 4-7
Knox	Creighton	Sept. 18-21
Lancaster	Lincoln	Sept. 7-14
Nance	Fullerton	Oct. 3-5
Nemaha	Auburn	Oct. 2-5
Nuckolls	Nelson	Sept. 20-22
Platte	Columbus	Sept. 26-28
Polk	Osceola	Sept. 3-6
Richardson	Salem	Sept. 18-21
Sarpy	Papillion	Sept. 17-20
Seward	Seward	Sept. 26-29
Thayer	Hebron	Sept. 3-6
Valley	Ord	Oct. 2-4
Wayne	Wayne	Sept. 26-28
Webster	Red Cloud	Sept. 25-28
York	York	Sept. 18-21

NEBRASKA DISTRICT.

Dixon	Wakefield	Sept. 18-20
Douglas	Omaha	Sept. 3-8
Fillmore	Fairmont	Aug. 28-31
Richardson	Falls City	Sept. 25-29

NEW HAMPSHIRE.

Belknap	Laconia	Sept. 4-7

NEW JERSEY.

Atlantic	Egg HarborC'y.	Sep.24-26
Burlington	Mt. Holly	Oct. 8-12
Cumberland	Bridgeton	Sept. 5-6
Hunterdon	Flemington	Sept. 25-28
Monmouth	Freehold	Sept. 25-27
Salem	Woodstown	Sept. 11-13
Sussex	Newton	Oct. 2-5

NEW YORK.

Allegany	Angelica	Sept. 25-27
Allegany	Cuba	Sept. 11-14
Broome	Whitney's Point	Sept. 4-7
Cayuga	Weedsport	Sept. 11-14
Chautauqua	Jamestown	Sept. 3-6
Chenango	Norwich	Sept. 4-7
Clinton	Plattsburgh	Sept. 18-21
Delaware	Deposit	Sept. 18-20
Erie	Hamburgh	Sept. 18-21
Fulton	Johnstown	Sept. 3-6
Genesee	Batavia	Sept. 25-27
Jefferson	Carthage	Sept. 4-6
Lewis	Lowville	Sept. 18-21
Livingston	Geneseo	Oct. 3-4
Monroe	Rochester	Sept. 25-28
Montgomery	Fonda	Sept. 4-7
Ontario	Canandaigua	Sept. 25-27
Orange	Goshen	Sept. 18-21
Orleans	Albion	Sept. 20-22
Oswego	Oswego	Sept. 11-14
Otsego	Cooperstown	Sept. 17-19
Queens	Mineola	Sept. 25-28
Rockland	Spring Valley	Sept. 11-14
Saratoga	Ballston	Sept. 11-14
Schoharie	Schoharie	Sept. 17-19
Seneca	Waterloo	Sept. 25-27
St. Lawrence	Canton	Sept. 11-13
Steuben	Hornellsv'le	Aug.27-S'p.1
Steuben	Prattsburgh	Sept. 11-13
Steuben	Bath	Sept. 25-28
Suffolk	Riverhead	Oct. 2-4
Sullivan	Monticello	Sept. 4-6
Tioga	Owego	Sept. 11-13
Tompkins	Dryden	Sept. 26-28
Tompkins	Ithaca	Sept. 4-7
Ulster	Ellenville	Sept. 25-27
Washington	Fort Edward	Sept. 18-21
Wayne	Clyde	Sept. 27-29
Wayne	Lyons	Oct. 4-6
Westchester	White Plains	Sept. 24-29
Wyoming	Warsaw	Oct. 3-4
Wyoming	Perry	Sept. 27-28
Yates	Penn Yan	Sept. 18-20

OHIO.

Adams	Winchester	Sept. 11-14
Allen	Lima	Sept. 4-7
Ashtabula	Jefferson	Sept. 25-28
Athens	Athens	Aug. 29-31
Auglaize	Wapakoneta	Oct. 2 5
Belmont	St. Clairsville	Sept. 5-7
Brown	Georgetown	Oct. 2-5
Carroll	Carrollton	Oct. 2-5
Champaign	Urbana	Aug. 28-31
Clarke	Springfield	Aug. 20-24
Clermont	New Boston	Sept. 4-7
Clinton	Sabina	Aug. 20-24
Clinton	Wilmington	July 31-A. 3
Columbiana	New Lisbon	Sept. 25-27
Coshocton	Coshocton	Oct. 10-12
Crawford	Bucyrus	Sept. 25-28
Cuyahoga	Chagrin Falls	Sept. 11-14
Darke	Greenville	Sept. 17-21
Defiance	Defiance	Sept. 4-7
Delaware	Delaware	Aug. 28-31
Erie	Sandusky	Sept. 18-21
Fairfield	Lancaster	Oct. 9-13
Fayette	Washington C.H.	A. 28-31
Fulton	Wauseon	Sept. 4-7
Gallia	Gallipolis	Aug 30-Sep. 1
Geauga	Burton	Sept. 18-21
Greene	Jamestown	Aug. 14-17
Hancock	Findlay	Sept. 12-15
Hamilton	Carthage	Aug. 21-24
Hardin	Ada	Sept. 18-21
Hardin	Kenton	Sept. 4-7
Harrison	Cadiz	Oct. 2-5
Harrison	Smyrna	Sept. 11-13
Henry	Napoleon	Sept. 10-14
Highland	Greenfield	J'y 31-Aug. 3
Highland	Hillsboro	Aug. 7-10
Hocking	Logan	Oct. 3-6
Holmes	Millersburg	Sept. 25-28
Huron	Norwalk	Sept. 11-14
Jefferson	Smithfield	Sept. 26-28
Knox	Mt. Vernon	Aug. 28-31
Lake	Painesville	Sept. 10-13
Licking	Newark	Oct. 2-6
Licking	Pataskala	Aug. 28-31
Logan	Bellefontaine	Oct. 2-5
Lorain	Elyria	Sept. 4-7
Lorain	Wellington	Aug. 28-31
Mahoning	Canfield	Oct. 2-4
Mahoning	Youngstown	Sept. 18-21
Marion	Marion	Sept. 25-28
Medina	Medina	Sept. 4-6
Meigs	Pomeroy	Sept. 5-7
Mercer	Celina	Sept. 25-28
Miami	Troy	Oct. 1-5
Monroe	Woodsfield	Sept. 11-13
Montgomery	Dayton	Sept. 17-21
Morgan	McConnelsville	Oct. 9-12
Morrow	Mt. Gilead	Oct. 2-5
Muskingum	Zanesville	Aug. 28-31
Noble	Sarahsville	Sept. 5-7
Ottawa	Port Clinton	Sept. 26-28
Paulding	Paulding	Sept. 11-14
Perry	New Lexington	S. 26-28
Perry	Somerset	Oct. 16-18
Pickaway	Circleville	Oct. 2-5
Portage	Ravenna	Sept. 26-28
Preble	Eaton	Sept. 24-28
Putnam	Ottawa	Oct. 2-6
Richland	Mansfield	Aug. 28-31
Richland	Plymouth	Oct. 2-5
Sandusky	Clyde	Sept. 25-28
Sandusky	Fremont	Oct. 2-5
Seneca	Fostoria	Aug. 21-25
Seneca	Tiffin	Sept. 11-14
Shelby	Sidney	Sept. 25-28
Stark	Canton	Sept. 24-28
Summit	Akron	Oct. 2-5
Trumbull	Hartford	Sept. 4-7
Trumbull	Warren	Sept. 6-8
Tuscarawas	Canal Dover	Oct. 2-5
Union	Marysville	Oct. 2-5
Van Wert	Van Wert	Sept. 4-7
Vinton	McArthur	Aug. 8-10
Warren	Lebanon	Sept. 28-31
Washington	Marietta	Sept. 12-14
Wayne	Wooster	Oct. 2-5
Wayne	Orrville	Oct. 9-12
Wood	Bowling Green	Oct. 2-6
Wood	Tontogany	Sept. 25-29
Wyandot	Upper Sandusky	Oct. 2-5

OHIO DISTRICT.

Belmont	Barnesville	Oct. 9-11
Clinton	Martinsville	Sept. 4-7
Defiance	Hicksville	Sept. 18-21
Greene	Jamestown	Aug. 14-17
Licking	Pataskala	Aug. 28-31
Lucas	Toledo	Aug. 27-31
Montgomery	Dayton	Sept. 17-21
Noble	Caldwell	Sept. 18-21
Portage	Deerfield	Sept. 27-29
Richland	Shelby	Sept. 18-21
Scioto	Portsmouth	Aug. 7-10
Stark	Mariboro	Oct. 4-6

OREGON.

Washington	Hillsboro	Sept. 11-14

PENNSYLVANIA.

Armstrong	Kittanning	Sept. 19-21
Armstrong	Parker	Sept. 18-21
Armstrong	Dayton	Sept. 25-28
Beaver	Beaver	Sept. 25-28
Beaver	Brighton	Aug. 28-24
Bedford	Bedford	Sept. 18-21
Berks	Reading	Sept. 4-7
Berks	Kutztown	Oct. 3-5
Blair	Hollidaysburg	Sep.11-14
Bradford	Canton	Sept. 4-6
Bradford	Troy	Sept. 4-7
Bradford	Towanda	Sept. 25-27
Bucks	Doylestown	Oct. 3-6
Butler	Butler	Sept. 11-14
Butler	Millerstown	Sept. 4-7
Carbon	Lehighton	Oct. 2-5
Clarion	Clarion	Sept. 25-28
Chester	Oxford	Sept. 25-28
Chester	West Chester	Sept. 20-22
Columbia	Benton	Oct. 3-6
Columbia	Berwick	Sept. 12-15
Columbia	Bloomsburg	Oct. 10-13
Crawford	Cambridge	Sept. 5-7
Crawford	Cochranton	Sept. 12-14
Crawford	Conneautville	Sept.18-21
Crawford	Titusville	Sept. 18-21
Crawford	Woodcock	Sept. 19-21
Cumberland	Carlisle	Sept. 25-28
Dauphin	Gratz	Sept. 18-21
Erie	Corry	Sept. 11-14
Erie	Edinboro	Sept. 11-14
Erie	Erie	Sept. 18-21
Erie	Wattsburg	Sept. 25-28
Fayette	Uniontown	Oct. 2-5
Greene	Carmichael's	Sept. 25-27
Green	Waynesburg	Sept. 11-13
Indiana	Indiana	Oct. 2-5
Jefferson	Brookville	Sept. 11-14
Jefferson	Punxsutawney	Sep.18-21
Juniata	Port Royal	Sept. 25-28
Lackawanna	Scranton	Sept. 18-21
Lancaster	Lancaster	Sept. 17-22
Lebanon	Lebanon	Sept. 25-28
Lehigh	Allentown	Sept. 24-28
Luzerne	Dallas	Oct. 2-5
Luzerne	Wyoming	Sept. 25-28
Lycoming	Hughesville	Oct. 3-7
McKean	Port Allegany	Sep. 13-15
Mercer	Mercer	Sept. 10-12
Mercer	Stoneboro	Sept. 25-27
Monroe	Stroudsburg	Sept. 25-29
Montour	Danville	Sept. 12-15
Montour	Washingtonv'e	Oct.16-19
Montgomery	Pottstown	Sept. 25-28
Northampton	Easton	Sept. 11-15
Northampton	Nazareth	Oct. 2-5
Northumberland	Milton	Sept. 5-8
Perry	Newport	Sept. 18-21
Schuylkill	Orwigsburg	Oct. 2-5
Schuylkill	Ringtown	Sept. 12-14
Sullivan	Forksville	Oct. 3-5
Susquehanna	Montrose	Sept. 12-13
Susquehanna	Harford	Sept. 26-27
Tioga	Wellsboro	Sept. 11-14
Tioga	Mansfield	Sept. 25-28
Tri-State Exp'n	Mechanicsb'g, Grove	William's Aug. 27-Sept. 1
Union	Lewisburg	Sept. 12-15
Venango	Franklin	Sept. 4-7
Warren	Warren	Sept. 18-21
Washington	Burgettstown	Oct. 2-4
Washington	Washington	Sept. 4-7
Westmoreland	Greensburg	Sept. 18-21
Wyoming	Tunkhannock	Sep. 12-14
York	Hanover	Sept. 18-21
York	York	Oct. 2-5

RHODE ISLAND.

Providence	Narragansett P'k.	S.24-28
Washington	W. Kingston	Sept.18-20
Washington	Westerly	Sept.18-20

SOUTH CAROLINA.

Marion	Marion	Nov. 7-9

TENNESSEE.

Bedford	Shelbyville	Sept. 6-8
DeKalb	Alexandria	Sept. 20-22
Gibson	Trenton	Oct. 9
Rutherford	Murfreesboro	Sep. 11-15
Wilson	Lebanon	Sept. 6-8

VERMONT.

Caledonia	St.Johnsbury	Sept.18-20
Franklin	St. Albans	Aug. 29-31
Lamoille	Morristown	Sept. 25-27
Rutland	Rutland	Sept. 18-20

VIRGINIA.

Accomack	Keller	Aug. 21-25
Albemarle	Scottsville	Sept. 19-21
Augusta	Staunton	Sept. 25-28
Fairfax	Grange Camp	Sept. 11-18
Frederick	Winchester	Oct. 9-12
Loudoun	Leesburg	Sept. 11-13

WASHINGTON TERRITORY.

Walla Walla	Walla Walla	Oct. 1-6

WEST VIRGINIA.

Harrison	Clarksburg	Sept. 11-14
Jackson	Ravenswood	Sept. 18-21
Mason	PointPleasant	Sept.11-14
Monroe	Alderson	Sept. 11-14
Ritchie	Pennsboro	Sept. 18-20
Tyler	Middlebourne	Sept. 5-7

WISCONSIN.

Brown	De Pere	Sept. 4-7
Chippewa	Chippewa Falls	Sept. 4-7
Dane	Madison	Oct. 1-6
Dodge	Beaver Dam	Oct. 2-5
Dunn	Menomonee	Sept. 12-14
Fond du Lac	Fond du Lac	Sept. 11-14
Grant	Boscobel	Sept. 11-14
Grant	Lancaster	Sept. 19-21
Green	Monroe	Sept. 12-15
Jefferson	Watertown	Sept. 24-28
Kewaunee	Kawaunee	Sept. 24-26
La Crosse	West Salem	Sept. 4-7
Marathon	Wausau	Sept. 17-19
Monroe	Sparta	Sept. 11-13
Outagamie	Hortonville	Sept. 26-28
Ozaukee	Saukville	Sept. 26-27
Pierce	Ellsworth	Sept. 26 28
Portage	Amherst	Sept. 25-27
Racine	Racine	Sept. 4-7
Rock	Janesville	Sept. 11-14
Sauk	Baraboo	Sept. 11-14
Sheboygan	SheboyganFalls	Se.18-21
Vernon	Viroqua	Sept. 26-28
Walworth	Elkhorn	Sept. 25-28
Waukesha	Waukesha	Aug. 28-31

WISCONSIN DISTRICT.

Columbia	Lodi	Sept. 25-28
Iowa	Mineral Point	Sept. 4-7

CANADA.

Carleton	Ottawa	Sept. 24-29
Elgin	Wallacetown	Oct. 2-3
Elgin	Rodney	Oct. 13
Frontenac	Kingston	Sept. 10-15
Glengary	Williamstown	Sept.26-27
Grey	Durham	Sept. 25-26
Hamilton	Hamilton	Sept. 24-28
Hastings	Belleville	Sept. 25-28
Kent	Chatham	Oct. 2-5
Lincoln	St. Catharines	Sept.24-26
London	London	Sept. 20-29
Middlesex	Strathroy	Oct. 2-3
Norfolk	Simcoe	Oct. 16-17
Ontario	Port Perry	Sept. 25-28
Ottawa	Ottawa	Sept. 24-29
Peterboro	Peterboro	Sept. 25-27
Prince Edward	Pictou	Oct. 2-3
Queen	Charlottetown	Oct. 3-4
Sherbrooke	Sherbrooke	Sept. 4-6
Simcoe	Cookstown	Oct. 9-10
Simcoe	Collingwood	Sept. 25-28
Toronto	Toronto	Sept. 10-22
Victoria	Lindsay	Oct. 2-4
Waterloo	Berlin	Sept. 27-28
Wellington	Elora	Oct. 4-5
Wellington	Guelph	Sept. 12-14

Schlichting & Rendsburg,

21 to 29 Ann St., N. Y.

Manufacturers of

WALKING CANES.

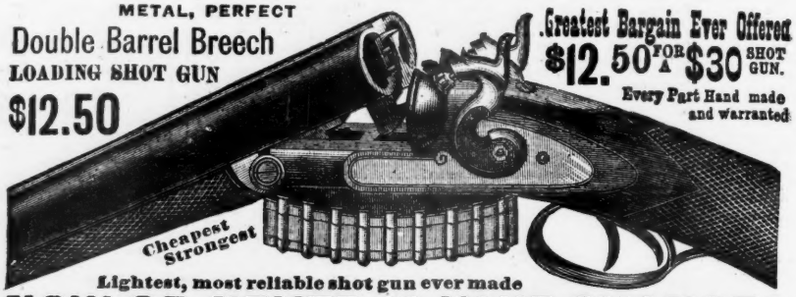
If you want to get a good outfit of **Canes** and **Rings** at cheapest manufacturers' prices, write for a price list. All goods delivered prompt, C. O. D. by express, on receipt of a deposit with order.

Contents of This Number.

Animals, Convalescent, Care of....372
Apiarists, Scarcity of Competent....364
Apples, Marketing....365
Apple, The Grange....2 *Illustrations*..375
Apple-Worm or Codlin Moth, The....370
Autumn Treasures....383
Basket Items....392
Bee Notes for September....398
BOYS' AND GIRLS' COLUMN:
"Simple Tim"....*Illustrated*..387
Riddles in Olden Times....388
The Doctor's Talks....4 *Illustrations*..389
Bertie's Letter from the Country....*Illustrated*..390
Requisites for Health and Happiness....390
A Talk with Boys....390
British Dairy Interests....380
Beetles, May....367
Buffalo Bill's Horse Charlie....*Illustrated*..365
Cattle, The, of Northern Italy....2 *Illustrations*..377
Cheese, New Zealand....392
Cotton and Its Products....402
Dairy Problems, Some....375
Dictionary of Politics, A....402
Dwelling, Suburban, Costing $3,500...3 *Illustrations*..367
Educate the Hand....394
Fairs, List of....406
Farm and Garden Work for September...*Illustrated*..362
Farming in Foreign Lands....391
Fertilizers for Sweet Potatoes....392
Flail, A Dakota....*Illustrated*..374
Flower Garden and Lawn for September....362
Fowls, The Wayondotte Breed....*Illustrated*..381
From Near and Far....396
Fruit, Assorting....*Illustrated*..379
Fruit Crop Reports, The....393
Fruit Evaporator, Points from an Expert....376
Fruit, Grading....377
Fruit, Marketing Southern....392
Fruit, The Wastes of....394
Fruits, Surplus, The Best Uses for....366
Grape Crop, The....392
Grape Culture in Canada....378
Grapevines, Treatment of....393
Harvest Luck....377
Hay, Making and Raising....392
Honey, Extracted....371
HOUSEHOLD, THE:
Ornamental Supports for a Clothes-line..*Illustrated*..384
Putting Down Carpets....384
Crochet and Knitting....384
Home-made Jet Ornaments....*Illustrated*..384
Nightcaps....384
Education Lightens Work....385
A Neat Work Bag....*Illustrated*..385
Pretty Pillow Shams....*Illustrated*..385
A Handsome Carriage Robe,....*Illustrated*..385
Early Fall Fashions....385
A Plea for Children on the Farm....386
Jars for Canning, Glass Better Than Tin....376
Live Stock Notes....362
Kitchen and Market Garden in September....362
Land, The Most Profitable on the Farm....394
Matters of Business....405
Meetings of Breeders and Dairymen....403
Milk, Cooling....393
Monthly Crop Report....398
Muscalonge, Artificial Propagation of the....366
Northwest, A New Empire in the....*Illustrated*..373
Onion Raising in Dakota....378
Orchard and Fruit Garden for September....398
Our Caged Pets....381
Pansy, A Double....393
Peach Vinegar....376, 393
Pecan Nut, The, in Texas....377
Peccary, the Collared....*Frontispiece*..374
Piggery, A Convenient....2 *Illustrations*..379
Plant, A, from Kansas....398
Planting, Fall or Spring....368
Poultry Farm, Plan for a Woman's....368
Poultry Notes....371
Prairie Sod, Taming....379
Protecting the Banks of Irrigation Canals....378
Public Lands, The New Act Relating to the....380
Public Lands Bill, The New....394
Seed Corn, The Proper Selection and Care of..2 *Illus.*..363
Seeds, Improvement of, by Selection....364
Sheep, The Shropshire Breed of....2 *Illustrations*..370
Skunks, Trapping....392
Stable Floor, A....377
Stock, Clean Without Bedding....*Illustrated*..373
Strawberries in Vineyards....393
Strawberry, The Gandy....*Illustrated*..375
Sub-tropical Exposition, Notes on the....368
Sundry Humbugs....403
Surplus Products of American Agriculture..*Illustrated*..395
The Insect World....405
Thistles, Canada, How to Kill....372
Tightening Fence Wire....*Illustrated*..379
Timber Land, Breaking....3 *Illustrations*..374
Veterinary College, American....393
Washington Territory Fruits and Vegetables....364
Wheat, Its Growth and Its Products in the Mill XIII..
....3 *Illustrations*..369
Window Plants in September....398
Yuccas as Ornamental Plants....4 *Illustrations*..382

The "WOOLWICH"

METAL, PERFECT
Double Barrel Breech
LOADING SHOT GUN
$12.50



Greatest Bargain Ever Offered
$12.50 FOR A $30 SHOT GUN.
Every Part Hand made and warranted

Lightest, most reliable shot gun ever made

NOW OR NEVER IS YOUR CHANCE!

to get the best handmade, reliable shooting gun ever manufactured.

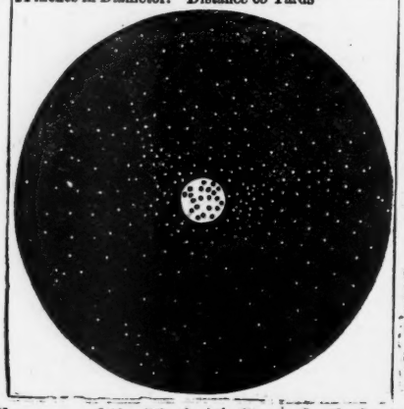
In the great gun factories of the world continual experiments are made to obtain the greatest strength with other needed qualities in **gun metal.** After innumerable trials they at length hit upon the kind of metal used in this gun, hence it is named the **"WOOLWICH,"** in honor of the Woolwich Infant, the most powerful Rifled cannon in existance. But not only is the metal **the best in the world,** but it is made by the most skillful artizans to be found in any gunsmith's shops anywhere. It is

The Grandest Triumph of Intelligence and Practice.

It is made for **service, not show,** although very handsome. No other breech-loader begins to have anything like the same **powerful action.** It is a centre fire, 10 or 12 bore. **Steel Barrels** finely bored. **Has very** easy working Steel Lock, blued; an **automatic shell ejector** suits either paper or brass shells handsome case hardened mountings. Barrels 28, 30 and 32 inches.

It Shoots Perfectly at 80 Yards and Will Kill at 150 Yards.

This Illustrates a Target with both Barrels. Target 24 inches in Diameter. Distance 65 Yards.



It is one of the strongest arms ever made **weighs from 7½ to 9½ pounds,** it has all the best qualities found in a $50 Shot Gun. The instant your eye spots this gun you will admire it and the first trial will convince you that you never took sight over a better or truer piece. We intend to be permanently engaged in the sale of the **WOOLWICH** Gun and for this reason we put it, **for the present,** at so low a figure, as we are satisfied that every Hunter and Sportsman will concede it to be the best shooting gun furnished at any price. So satisfied are we of the great merits of this gun that we will send C. O. D. on receipt of **$3.00,** subject to examination. Balance of bill to be paid at express office. As soon as enough of these guns are sold at **$12.50** to make them well known to the shooting classes we shall put the price up to $25.00 knowing they will readily sell at that wherever known. **Now is the time to be sure of getting this excellent Gun at** $12.50. A good gun like a good watch is always valuable and will often sell for more than twice its cost. To any one sending $12.50 at once, full amount of cash with order

WE WILL GIVE FREE A SPORTSMAN'S BELT of fine water-proof canvas and 25 Shells extra.

Our patented solid brass shells, which prevent charges and wads from falling out, furnished at **60** cents a Dozen, **$4** a Hundred. Paper Shells **75** cents per Hundred, $2.00 will buy full set reloading tools,

IF YOU WANT A GOOD SHOT GUN AT A MODERATE PRICE BUY THIS.

Send money by Post Office Order or registered letter.

World M'f'g Co. 122 Nassau St., New York

We recomend the Woolwich Gun to be the best gun in the market at a moderate price.

MAGIC LANTERNS AND VIEWS
For Sale and Wanted. *Moving Boxes, Organettes, Photo. Outfits,* **Steam Engines,** *Electric and Mechanical Novelties.* **Catalogues Free.**
HARBACH & CO., 809 Filbert St., PHILA., PA.

$230 A MONTH. Agents Wanted. 90 best selling articles in the world. 1 sample *Free.* Address JAY BRONSON, Detroit, Mich.

WANTED—A lady in each town to take orders for something new every lady wants; we pay $2.50 for first five hours work; sample and instruction 10 cents. STAYNER & CO., Providence, R. I.

PATENTS Information, Advice and Terms for procuring Patents in the best manner (including Electrical cases), sent free on application to FRANKLAND JANNUS, Patent Lawyer, Washington, D. C.

MARK YOUR TOOLS WITH A STEEL STAMP OR BURNING BRAND. PRICE LIST FREE J.B. RONEY LYNN MASS

DYSPEPSIA.—Its Nature, Causes, Prevention and Cure. By JOHN H. MCALVIN, Lowell, Mass., 14 years Tax Collector. Sent free to any address.

JUST PUBLISHED.

Quince Culture

A Hand-Book for the Propagation and Cultivation of the Quince.

—CONTAINING DESCRIPTIONS OF—

Varieties, Diseases, and Insect Enemies.

With Numerous Engravings.

By W. W. MEECH, A.M., V.D.M.,

Honorary Member of the New Jersey State Horticultural Society.

CLOTH, 12mo. PRICE, POST-PAID, $1.00.

ORANGE JUDD CO.,
751 Broadway, New York.

ODORA

ODORA PREPARATIONS.

ODORA BATH POWDER, Boxed, 50c and $1.
ODORA SHAMPOO POWDER. 25c.
ODORA TOOTH POWDER, 25c.
ODORA SACHET POWDER. 15c.
ODORA FACE POWDER (*Flesh or White*), 25c.

All the ODORA preparations are highly perfumed, and absolutely perfect in every particular, preserving the beauty of the complexion, teeth and hair. They completely furnish a toilet case, and no lady can afford to be without them, as they enhance the comfort as well as the beauty of the person.

At druggists or by mail. A beautiful book free.

ODORA CO.,
532 Washington Street, New York.

ADVERTISING RATES.

Ordinary Pages, **$1.00** *per line* (agate), each insertion.
Last Page, and Third Cover Page, **$1.25** *per line.*
Second Cover Page, **$1.50** *per line.*
Page next to Reading and Last Cover Page, **$2.00** *per line.*

No advertisement taken for less than **$3.00** each insertion.

Fourteen agate lines make one inch.

Direct all Business Communications pertaining to Advertising to

ORANGE JUDD CO.,
Publishers American Agriculturist,
751 BROADWAY, NEW YORK.